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THE UNIVERSITY OF ALBERTA

PERCEPTION OF STRESS REPORTED BY ALBERTA COLLEGE NURSING STUDENTS

BY

ELIZABETH EMILY ROLLHEISER

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

FALL, 1987

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Canada T6H-0B8

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(Student's permanent address)
Edmonton T6H0B8

Date: October 9, 1987

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Perception of Stress Reported by Alberta College Nursing Students submitted by Elizabeth Emily Rollheiser in partial fulfillment of the requirements for the degree of Master of Education.

R.G. McIntosh
(Supervisor)

Peggie Platt

Date: Sept. 29, 1987

This document is dedicated
to all those who have lovingly supported
their spouses through
post-secondary education programs.

ABSTRACT

This study examined the extent to which nursing students from two Alberta colleges perceived stress related to nursing and non-nursing courses as well as in the clinical situation. The relationship of individual, structural and educational characteristics was also explored.

A questionnaire developed specifically for this study was the single source of data collection used. Data on the stressfulness and frequency of 61 potentially stressful situations as well as personal and general data were collected. There was an overall return rate of 87% with 185 questionnaires usable for statistical analysis.

Several major findings of the study have been listed below:

1. The average amount of stress associated with either being or becoming a student was considered to be very or extremely stressful by over 35% of the respondents.

2. College B nursing students reported higher levels of stress than College A students.

3. The three most stressful items were: writing an exam, having more class assignments then you feel you can manage and discovering your final grades in nursing courses.

4. Overall, a significant positive relationship was found between the frequency and stressfulness associated with each stress-related situation.

5. A factor analysis of the 61 stress situations revealed the following six factors: expectations regarding performance, conflict and anxiety, personal demands, student relationships, difficult patient situations and relationships with non-nursing instructors. Generally, the average amount of stress associated with each factor was mild to moderate.

6. Approximately 75% of respondents indicated that financial support was a problem.

7. Family and faculty support were not a problem for the majority of respondents, although 11% reported that faculty support was a moderate to serious problem.

8. On specific factors, the following categories of individual characteristics were found to have significant relationships: female versus male students, widowed and divorced versus single students, single versus married students, and students with dependents versus those without dependents.

The relationship between the findings of this study and the literature was examined. Several recommendations were made regarding what role educators, administrators and students could play in relieving the stress of college nursing students. Recommendations for further research were also addressed.

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It is with much appreciation that I gratefully acknowledge the support my family has contributed towards the completion of this document.

If attainment of further education was not such a high priority for them, this thesis would not have been completed.

I am indebted to my husband, Brian, who has provided me with the continual support and understanding necessary to persevere with this degree and thesis.

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CHAPTER 1

NATURE OF THE STUDY

Introduction and Significance

The word stress is widely used today. This concept is used frequently in the literature regarding education and in society as a whole. The contention that some types of nursing students experience stress is well supported in the literature.

There are many approaches which could be used to justify further exploratory study in the area of nursing student stress. One way would be to consider the harmful effects of stress. Pelletier (1977) identified stress as being the number one health and social problem in our society over the next few years, and pointed out that stress is related to physical and psychological disorders. Most medical textbooks state that between 50% to 80% of all diseases are psychosomatic or stress related in origin. Therefore, learning about stress could promote both physical and mental health (Pelletier, 1977). Heinemann added that when "...conflicts are allowed to persist, the energy normally used for learning and performance is diverted to preoccupation with these conflicts" (1964:38). Other reasons for undertaking this study will be presented in the literature review.

There were several difficulties with the stress literature as it pertained to nursing students. One difficulty was that a great deal of the relevant literature lacked a data base and in addition, many of the sources were over ten years old. Since society and nursing have significantly changed over that period, previous findings for nursing student stress will not necessarily apply to the situation of today.

Compared to the recent literature which examines educator stress, there is only a scant amount of research regarding stress experienced by nursing students (Mancini, Lavecchia and Clegg, 1983; Sobol, 1978). As for the brevity of the current literature, McKay points out that

> If we delude ourselves that nursing students today do not experience stress and anxiety, ...we are blind both to the evidence of history and to the subjective experience of students as they progress through the curriculum .... Because student behavior has changed so drastically, we should not assume that there is less anxiety and stress than in the past(1978:390).

Presently in Alberta, there are three basic types of nursing programs which lead to the attainment of the status of a Registered Nurse; these are university, hospital, and college based programs. One of the reasons for the absence of literature regarding college nursing student stress is that the community colleges have only been in existence for about twenty years, and offering nursing programs for even a shorter period of time. Until that time, nurses mainly graduated out of hospital schools of nursing.

Another supporting reason for this study is that some stressors identified in the literature do not apply to college nursing students. It has been claimed in the literature that nursing students are still developing into adulthood; not only must the nursing student deal with the stress of being a student, but also with the additional trauma of becoming an adult. This issue does not completely apply to contemporary college nursing students. The approximate age of these nursing students appears to be somewhat higher than described in the literature. Therefore, the earlier literature which mainly refers to adolescent nursing students can not be easily generalized to include the college nursing student.

In addition, this study will provide knowledge of student problems and concerns that will be valuable to students attempting to alleviate stress. Nursing educators and administrators also need to be aware of exactly what the students in their respective programs find to be sources of stress. Such knowledge will enable nurse educators to: (1) better relate to and understand the nursing student, (2) effectively structure the learning environment (Gunter, 1969a), and (3) identify how the student responds to a stressful event in terms of their pattern of coping (Strauss and Hutton, 1983). As Humphrey explains, "Certainly, if one is to engage in a successful stress management program, it is essential that he or she have a basic understanding of just what is to be managed" (1982: vii).

Definitions

Stress. Both Mechanic (1978) and Jankovic (1983) were found to have clear and understandable operational definitions of the word stress. Jankovic defines stress as

> ... the experience of a whole range and mixture of unpleasant sensations: predominantly tension, anxiety, depression, frustration, and a feeling of being emotionally drained resulting from pressures or over-burdening demands (1983:9).

Mechanic (1978) simplifies this definition somewhat by defining stress as discomforting responses of persons in particular situations. Both of these definitions reflect the view that the individual's experience of an event determines whether the event is stressful or not.

Stressor. "A stressor is any demand on your mind or body" (Schafer, 1978:27). Humphrey adds that stress is a state and stressors are the agents (1982). All types of situational stimuli or sources of stress will be referred to as stressors.

Magnitude of the stressor. Ratsoy and Friesen have defined this to be the summation of the intensity and frequency of a stressor (1985).

Student. This term will refer to any person enrolled in a post secondary educational program. This includes both adults and adolescents, since both groups appear in our colleges, universities and nursing programs.

Individual Characteristics. These will be referred to later in the text as those characteristics which are personal in nature to the student. Included are items such as the individual's age, gender, educational background, presence and number of dependents, financial situation, and the adequacy of faculty and family support.

Structural Characteristics. These refer to the external situation which sets "parameters" around the student, and would include the college the student is attending and the year of the program they are completing.

Educational Characteristics. This refers to the variables which relate to the education of the student. Specifically, this would involve the components of the college nursing programs: nursing theory and non-nursing courses, as well as the clinical component.

Problem

In the literature many different situations have been reported as being stressful for nursing students. There is a gap, however, in our knowledge of the Canadian situation, particularly in Alberta, and also with our knowledge of the college nursing students experience of stress. The aim of this study was to explore what Alberta college nursing students perceived to be stressful for them, and in so doing seek to resolve the inconsistencies in the related literature. This has been accomplished by describing stressful situations which for the most part, have been reported in the literature. These situations were then assessed for their degree of stressfulness by respondents drawn from the proposed population.

Research Questions

General Research Question

This study examined the sources of stress experienced by college nursing students. Specifically, the following problem was explored:

what educational, structural and personal factors do nursing students from two Alberta colleges report to be stressful for them?

The following questions served as guidelines for the conduct of this study. They were based primarily on the literature, supplemented by the past experience of the researcher. The format used by Jankovic (1983) was followed in constructing research questions and subquestions.

Research Question 1

To what extent do college nursing students at two Alberta colleges experience stress?

Subquestions

1.1 How frequently has each situation occurred?

1.2 How stressful have students perceived each situation to be when it has occurred?

1.3 What is the rank order of each situation from the most stressful to the least stressful?

1.4 What relationship exists between the frequency of the occurrence of each situation and the student perceptions of the stress associated with these situations?

1.5 What areas of stress can be identified from a factor analysis of student perceptions of stress associated with each specific situation?

1.6 What situations are identified by students to be very or extremely stressful?

Research Question 2

To what extent are the identified student stressors related to selected associated factors?

Subquestions

2.1 Which of the factor scores are most highly correlated with student perceptions of overall stress?

2.2 To what extent are differences in student perceptions of overall stress associated with:

2.2.1 Individual characteristics: age, gender, educational background, marital status, number of dependents, financial condition, faculty and family support?

2.2.2 Structural characteristics: college, year of program?

2.2.3 Educational characteristics: clinical situation, nursing and non-nursing courses?

Assumptions, Limitations and Delimitations

Assumptions

1. The perceptions of an individual are a valid means of measuring stress. Magnusson (1982) explained that if the individual defines situations as real, their consequences are also real. Derogatis (1982) supported this, and added that perceptions which are self reported are very useful because the data comes from the individuals, and not a third person's interpretation of an observation of the individual.

2. The students were able to understand and respond to the questionnaire using the definitions given, in the way intended by the researcher.

3. The responses given were accurate and sincere.

Delimitations

1. This study was confined to nursing students from both years of the basic two-year nursing programs offered at two Alberta colleges. It was estimated that a total of 200 to 300 students would be included in the total population. These two colleges were chosen due to the sizes of their classes and convenience for the researcher.

2. Due to the limitations of time and resources, several related areas were not addressed in this study. The following areas, although worthy research topics, were not intended to be explored in this study:

(1) The exploration of individual factors (hereditary or environmental) involved in the 'make up' of the nursing student. Examples would be Type A or Type B personality factors.

(2) Methods which nursing students presently use to cope with stress.

(3) The consequences of the nursing students' coping behaviors.

(4) The effects of stress on the individual student, including physical measurements such as blood pressure, pulse or the amount of palm perspiration.

(5) The effects of student stress upon people from the educational institution or in the student's personal life.

3. The data were collected exclusively by using the questionnaire which is included in this thesis as Appendix A.

Limitations

The delimitations and assumptions previously outlined suggest limitations to the study. Additional limitations are outlined below:

1. Since the study only involved nursing students from two Alberta colleges which are situated in approximately the same size of city, the findings may be restricted to colleges from cities of 60,000 people. However, to the extent that nursing students from different colleges, within or outside of Alberta, have similar circumstances to the students at these two Alberta colleges, the findings may lead to generalizations about nursing student stress.

2. Not all possible situations were included in the questionnaire.

3. Because only questionnaire data were gathered in this study, it was not possible to confirm the findings by alternate forms of data, e.g. interviews.

Organization of the Thesis

Following the introduction and significance which outlines the reasons why this study was undertaken, Chapter 1 includes the operational definitions, the research problem and questions, the assumptions, limitations and delimitations of the study. Chapter 2 presents a review of the related literature and conceptual frameworks. Chapter 3 contains the methodology and instrumentation. In Chapter 4, analysis of the data is commenced by a discussion of the respondents and the programs involved in the study. Chapters 5, 6 and 7 report the findings resulting from statistical analyses of the data. A discussion of the relationships between the findings of the study and the literature review is presented in Chapter 8. A review of the findings with implications and recommendations for further research appears in Chapter 9. The Appendices contain the questionnaire as well as the correspondence used in the study.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE AND CONCEPTUAL FRAMEWORKS

The general consensus gained from the literature is that the stress of nursing students is considerable.

> Students... experience levels of anxiety that can in no way be considered acceptable. While it is readily agreed that some anxiety is an effective motivator and part and parcel of life and living, measured anxiety in learners... is such that (it) might produce rank morbidity and ineffective functioning (Birch, 1979:22).

Several writers also agree that because of the work nurses perform, they are candidates for increased stress and burnout (Anderson and Basteyns, 1981; Jacobson and McGrath, 1983; Keane, Ducette and Adler, 1985; Storlie, 1979; Tschudin, 1985). Hillier's study found that nurses are often subject to severe stress (1981). Gillespie (1986) further reports that "...of all professional groups, nursing has one of the highest rates of suicide and nurses top the list of psychiatric out-patient referrals". Muff added that nurses are becoming increasingly vulnerable to stress due to chronic exposure to pain, suffering, hopelessness and death (1982).

This chapter will begin by exploring the state of the literature regarding this topic. Next, several definitions and models of stress will be reviewed. The effects of stress on students will be examined. However, the major portion of this chapter will be spent "mapping out" in a logical fashion what has been reported to be stressful for nursing students in the literature. It is only after such a task has been completed that it is possible to suggest what today's nursing students perceive to be stressful.

The Present State of the Literature

Several difficulties were found with the literature reviewed regarding nursing student stress. These concerns are related to: (1) the data base which supports some of the articles, (2) methodological inconsistencies, (3) a paucity of the literature, and (4) applicability of the material to the college nursing student and their perceived stress.

To begin with, the studies reported in the literature do not always have a data base. Some research has been designed and conducted using an experimental method. Some literature has been well documented and appears in an organized form. However, other sources have not made use of references nor do these sources appear to be based on an organized research approach. These writers usually are nurse educators offering opinions about what they deem nursing students find stressful.

There were other problems noted in the research literature. First of all, some studies were not designed to reveal causal relationships, yet such inferences have been taken from them (Parkes, 1982;

Payne, Todd and Burke, 1982). Secondly, many studies have focused on personality traits as being related to stress; yet, other sources have suggested that these traits are not useful in predicting who is at risk for distress (Folkman, 1982). Finally, only one viewpoint of stress was often used as the basis of a study.

An additional problem is that the majority of the general nursing student stress literature appears before 1975. Not only is the amount scarce but it is selective. The clinical situation seems to be the dominant focus for discussion regarding nursing student stress. This is not too surprising considering that hospital based programs were the main route for basic nursing education until fairly recently. Therefore, it is difficult to generalize forty years of findings which have mainly been drawn from the hospital setting to the present situation. Many changes have taken place in society during this time, including the development of many different types of nursing programs.

More specifically, there were major difficulties with the literature as it related to the stress of college nursing students. A small amount of relevant literature on the topic of nursing student stress could be located (Mancini, Lavecchia and Clegg, 1983; Sobol, 1978), and no source was found which examined stress of the Alberta college nursing student or nursing students from any Canadian college.

Conceptual Definitions and Exploration

Stress

The definitions of stress in the literature are voluminous, often contradictory and indeed confusing to the reader. One clear definition of this concept has retained its meaning from the fifteenth century to the present: "...physical strain or pressure" accurately defines stress in the fields of engineering and architecture. By the early eighteenth century, psychological stress was defined to refer to hardship, adversity or pressure upon a person. Likewise, in the mid-nineteenth century, this same concept meant strain upon the mental power of a human body (Shaffer, 1982:1). In 1981, Baum, Singer and Baum summed up the description of this difficult concept by referring to it as a process. They also suggested that the tradition of the researcher determines which phase or phases of this process will be explored.

A prominent stress theorist, Hans Selye, defined stress in 1976 as an organism's physiological maladaptation to an external stressor. The stressor is the stimulus and the organism's response is called stress. Cleland argues that,

> Stress, per se, can not be defined either in terms of the stimulus or the response but rather occurs as an interaction of the individual's motivation and field situation (1965:293).

This definition could be broadened to include that stress is an interaction between all individual factors and the situation. The magnitude of stress is the result of its frequency and intensity (Ratsoy and Friesen, 1985).

Jankovic (1983) and Mechanic (1978) were both found to have clear and understandable operational definitions of stress. Jankovic defined stress as,

> ... the experience of a whole range and mixture of unpleasant sensations: predominantly tension, anxiety, depression, frustration, and a feeling of being emotionally drained resulting from pressures or overburdening demands (1983:9).

Mechanic (1978) simplifies this definition somewhat by defining stress as discomforting responses of persons in particular situations. Both of these definitions place emphasis on the individual's meaning of the stressful event. The ability which he/she has to cope with the event has an effect on his/her perception of the stressor (Whitman, Spendlove and Clark, 1984).

Broverman and Lazarus (1958) have delineated stress producing situations into two groups. One is ego-threatening stressors and the other is cognitive-interference stressors. Ego-threatening stress may be produced by presenting an individual with an unsolvable task, comparing his performance to a set of false standards or by criticizing his performance while he is engaged in a task. Cognitive-interference stress refers to situations where conflicting demands are made of the individual's intellectual processes such as distractions, interruptions, time pressure or task overload.

Stressor

"A stressor is any demand on your mind or body" (Schafer, 1978:27). Humphrey adds that stress is a state and stressors are the agents (1982). All types of situational stimuli or sources of stress will be referred to as stressors.

Stressors can be positive or negative and can occur as either an external event, an internal thought or as a blend of both the cognitive and outside worlds. Examples of these events include: environmental and social conditions, physical illness, interpersonal relationships, good or bad memories, unrealistic expectations and unsolved conflicts. The triggering of a stressor depends on the individual's cognition, since it is the mind which signals the body that the stressor is occurring (Shaffer, 1982). Ben-Sira (1984) also supports this viewpoint.

Anxiety

Anxiety occurs when one anticipates danger or harm. This danger is seen as a threat either in the near or distant future. The anticipatory nature of anxiety has been supported and explained by various writers, with each suggesting that a future orientation is an important component (Caplan and Jones, 1975; Lazarus and Averil, 1972).

Burnout

Meier and Schemeck define burnout as diminished expectations for work rewards associated with physical and emotional exhaustion. It may be the predominant occupational hazard of this decade (1985). Researchers have found burnout to be present in college students. Pines, Aronson and Kaffry have studied burnout with such occupational groups as nurses, counsellors, educators and undergraduate students. In comparison with these other groups, students ranked in the middle to upper range of burnout. Measures of burnout can possibly determine who is going to leave their jobs and which students will be dropping out of their programs (1981).

Student

For the purpose of this thesis, the term student will refer to any person enrolled in a post secondary educational program. This includes both adults and adolescents, because both groups are enrolled in our colleges, universities and hospital nursing programs.

Conceptual Frameworks for Stress

There have been numerous models of stress reported in the literature. This diversity reflects the wide range of interests and areas of research concerning stress. Cox suggests that most concepts of stress fall under one of three frameworks. These are the engineering, the physiological, and the transactional models (1975:493-494).

Engineering Model

This model refers to external forces or pressures which are applied to a body to produce a reaction or strain within the body. It is

"... what happens to a person, not what happens within him" (Cox, 1975:493). This model would also apply to other researchers when they define stress as "... those aspects of the organization which the individual perceives as external forces acting upon him" (Gavin and Axelrod, 1977:67).

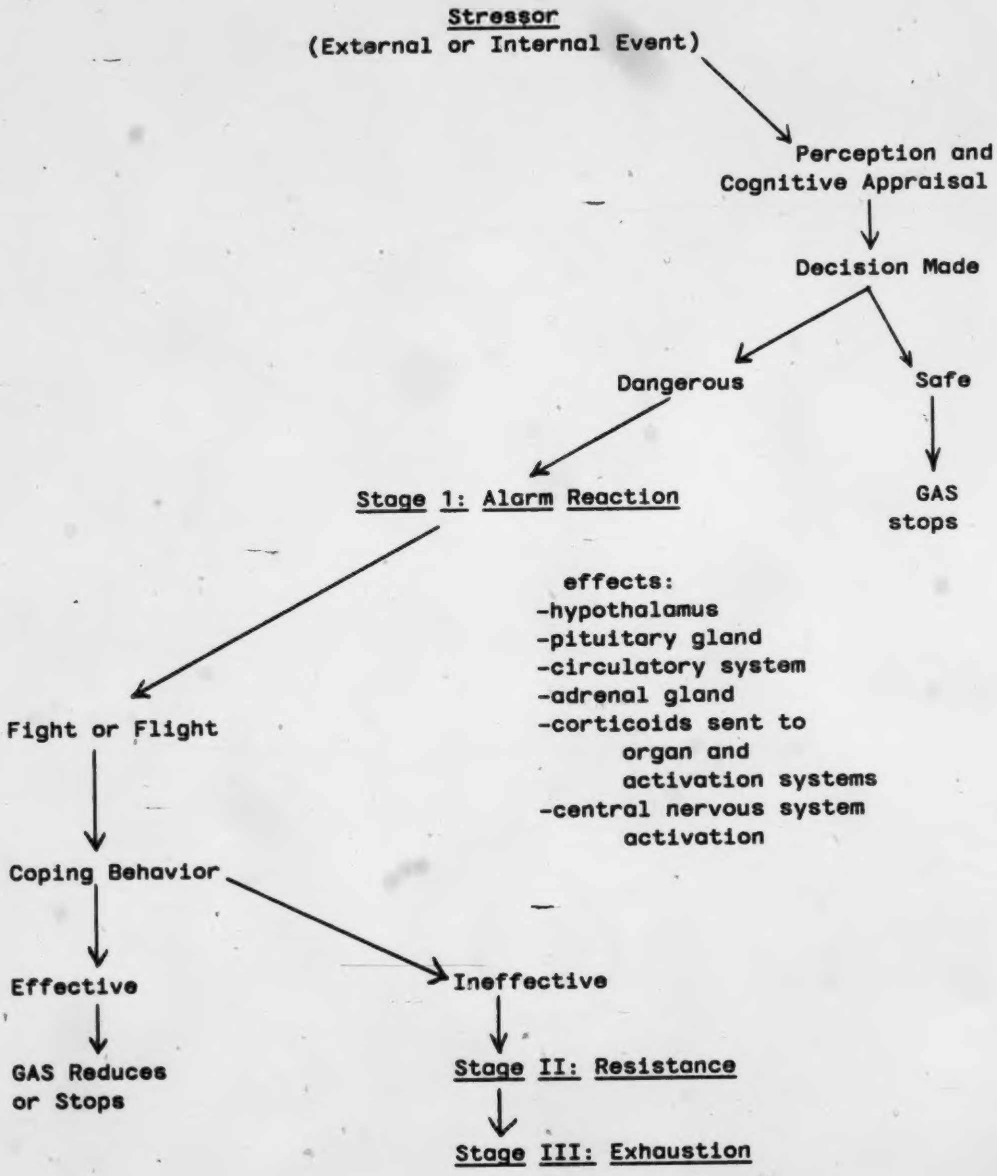
Physiological Model

Selye's research accounts for the main thrust of this approach. Selye suggested that although people face differing demands and problems, they respond with the same pattern of physiological changes. There is no way to avoid the General Adaptation Syndrome (GAS), since it is initiated by both positive and negative stressors (1976b). This is depicted in Figure 2.1 on page 20.

This model is a three-stage biological process where the body's biochemical defenses are mobilized in response to psychological and physical demands. The initial stage (alarm reaction) is when the body makes a biochemical effort to mobilize its defense forces. A release of adrenalin causes many reactions including: an increase in heart rate, respirations, muscular tension, and hormonal response (Selye, 1976a; Selye, 1976b). Cannon (1953) added that in extreme danger, the organism either confronts or flees the situation; in other words, a fight or flight response.

The second stage, called resistance, is when the body tries to maintain its equilibrium by actively attacking the stressor (Selye,

Figure 2.1
The Sequence of Events in the
General Adaptation Syndrome (GAS)
(Shaffer, 1982:15)


Stressor
(External or Internal Event)
Perception and
Cognitive Appraisal
Decision Made
Dangerous
Safe
GAS
stops
Stage 1: Alarm Reaction
effects:
-hypothalamus
-pituitary gland
-circulatory system
-adrenal gland
-corticoids sent to
organ and
activation systems
-central nervous system
activation
Fight or Flight
Coping Behavior
Effective
Ineffective
GAS Reduces
or Stops
Stage II: Resistance
Stage III: Exhaustion

1976a; Selye, 1976b). Shaffer explains that although the indicators of the alarm stage may disappear at this point, the organism's resources may become depleted if they have been mobilized for too long (1982). The third stage is appropriately called exhaustion. This is when the body gradually wears out since its ability to adapt is finite (Selye, 1976a; Selye, 1976b). At this point, the body is now more vulnerable to disease. Shaffer postulates that this is why stress and disease are related (1982).

Selye's GAS theory has been applied to physiological situations, but does not fit as well for psychological stress. Other research has shown that the body reacts very differently depending on whether the stressor is psychological or biological (Baum, Singer and Baum; 1981).

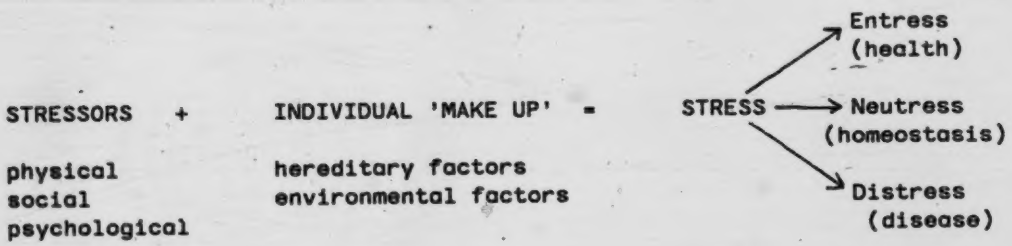
Transactional Model

A refined and expanded version of the interactional concept of stress becomes the transactional model (Lazarus, 1976). Strauss and Hutton suggest that with the interactional model, a stress response occurs from a lack of "fit" between individuals and their environment (1983). Cox adds that the cognitive and perceptual abilities of individuals play crucial roles in the interpretation of an event as being stressful, as well as their ultimate response to the event (1978).

The "person-environment fit" model of stress has been suggested by Marshall and Cooper (1979). As its name implies, stress is seen to occur as a consequence of the fit between the individual and the environment. As Jankovic explains, the individual's perception of a stressor determines the effect of a potentially stressful situation on the individual (1983). Therefore, an event is stressful to the degree an individual perceives it to be threatening, harmful or challenging.

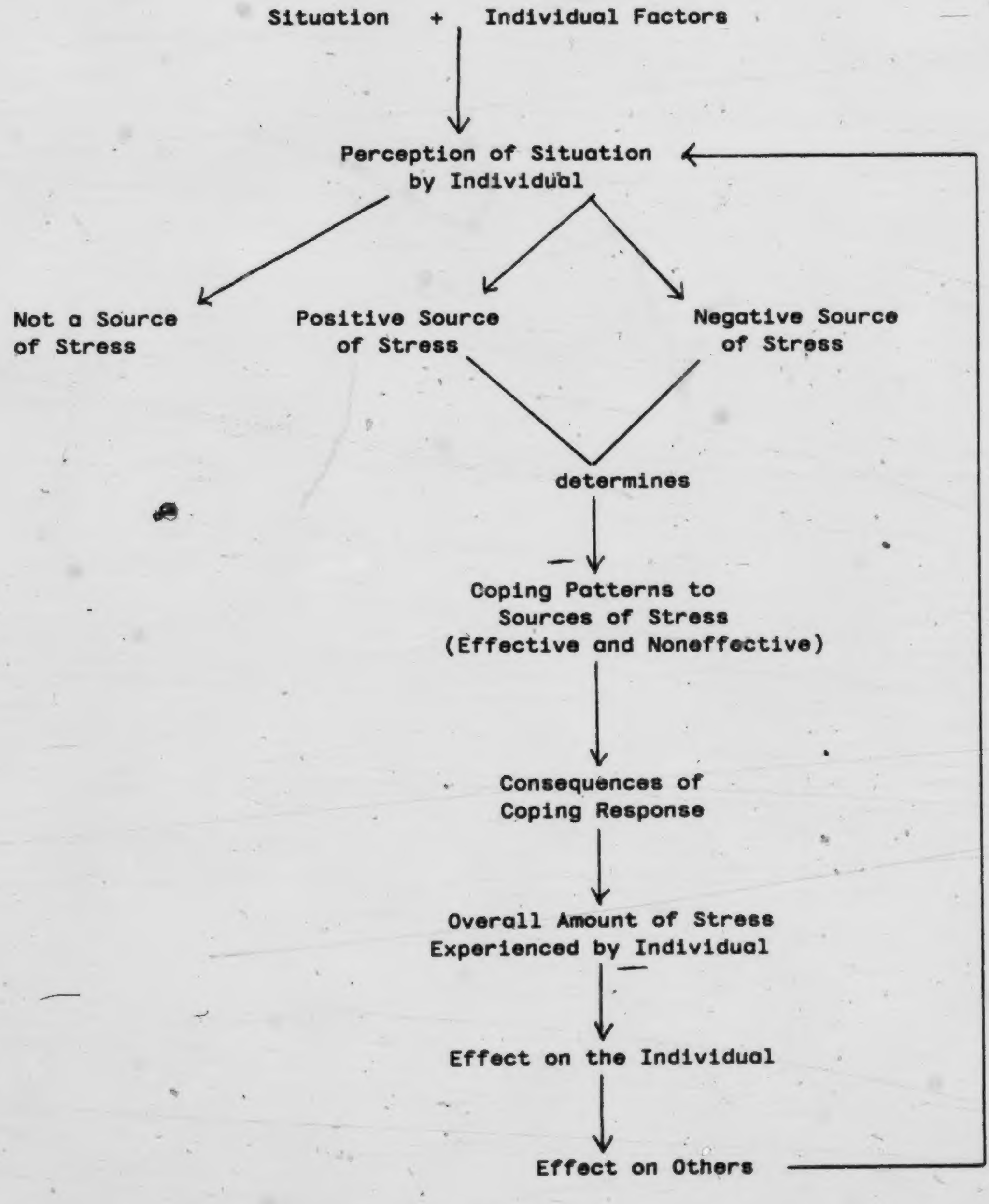
Morse and Furst (1979) graphically display a simple model called "The Stress Path". There are three parts to this model: (1) stressors which include physical, social, and psychological aspects, (2) an individual's "make up", which includes both hereditary and environmental factors, and (3) the amount of stress as determined by the first two components. Entress is the healthy type of stress, neutress maintains homeostasis, and distress leads to disease. This is shown in Figure 2.2.

Figure 2.2
The Stress Path
(Morse and Furst,1979:10).


STRESSORS +
physical
social
psychological
INDIVIDUAL 'MAKE UP' =
hereditary factors
environmental factors
STRESS
Entress
(health)
Neutress
(homeostasis)
Distress
(disease)

For the study of nursing students, this researcher has woven together the conceptual frameworks of Morse and Furst (1979:10) and Ratsoy and Friesen (1985:4) to create a new model. This model, as depicted in Figure 2.3, better describes the nursing student's experience of stress. The feedback mechanism is important because the process is continuous.

Figure 2.3
General Framework for Analyzing Stress


Situation + Individual Factors
Perception of Situation by Individual
Not a Source of Stress
Positive Source of Stress
Negative Source of Stress
determines
Coping Patterns to Sources of Stress (Effective and Noneffective)
Consequences of Coping Response
Overall Amount of Stress Experienced by Individual
Effect on the Individual
Effect on Others

The Effects of Student Stress

Reactions to stress can be physical, psychological or a combination of both. Physically, due to the sympathetic nervous system, stress can cause changes in heart rate, blood pressure, and the response of various hormones. General reactions to stress include arousal, boredom, anger, anxiety, depression, and discomfort (Whitman, Spendlove and Clark, 1984). Gunter (1969b) supports this in her study of 120 sophomore students, concluding that anxiety, nervousness, depression, and restlessness were present to some extent in the majority of nursing students surveyed. There appears to be an overabundance of literature which describes stress as a negative response. Humphrey supports this trend by showing that few college students saw any aspect of stress as positive (1982).

Prolonged exposure to a stressor results in information overload and fatigue. Hypervigilance adversely affects decision making and cognitive functioning according to Selye's stage of alarm reaction. Excessive alertness to all signs of potential threat result in a diffusion of attention (Janis, 1982). In the model of Morse and Furst, this would be called distress (1979). An inadequate amount of attention is then left in reserve to perform the task (Cohen, 1980), corresponding with Selye's stage of exhaustion.

> As conflicts are allowed to persist, the energy normally used for learning and performance is directed to preoccupation with these conflicts. The student with less energy left for learning finds herself even more frustrated and discouraged (Heinemann, 1964:38).

Premature closure, or quickly choosing a solution to end a stressful situation, is another consequence of high stress. An example would be rushing through an exam to finish. The disadvantage would be that when all the alternatives are not considered, one's problem solving ability is diminished (Janis,1982). Kirkland supports this in finding that if a student considers a test to be important and is anxious when taking tests, he is more likely to perform poorly on tests compared to one who is less anxious (1971). Extreme anxiety will interfere with a student's performance on a test. Conversely, mild anxiety will facilitate the student's performance. Cleland (1965) demonstrates this by finding a curvilinear relationship between performance of student nurses and stressor conditions.

There has been considerable support for the contention that anxiety is linked to lower achievement and greater difficulty with learning (Spielberger, 1966). Marshall has noted problems with the ability of learners to listen in testing situations (1974).

Although memory is considered to be one of the important tools students possess, burnout may reduce students' ability to remember study material. Two measures of burnout have correlated significantly with a measure of memory performance (Meier and Schemeck, 1985). Jeglin-Mendez has suggested that the academic performance of nursing students suffers when they are dealing with high amounts of stress and burnout. She writes as follows:

> Eventually the compromise to work-for-less-than-an-A (becomes) the adaptive method of problem solving in order to save one's equilibrium.... The students felt blocked in being able to

> demonstrate the quality of what they could really do unless they paid the price of burnout (1982:31).

Study results (Sobol, 1978) indicated that levels of nursing student self actualization were a significant predictor of anxiety in response to potentially stressful events. This study further confirmed "... the expectation that a subject's level of trait anxiety will vary inversely with the level of self actualization" (242).

Exposure to unpredictable and uncontrollable stress was found to create a decreased sensitivity towards others. In these situations, a decrease was also noted in recognizing individual differences and in offering assistance. As the support within social groups diminished, student performance also tended to decrease. In addition, an increase in aggression was also seen (Cobb, 1975).

General Sources of Stress

> There are so many general causes of stress that almost anything that occurs in our life can cause stress to a certain degree (Humphrey, 1982:25).

Ivancevich and Matteson (1980) have distinguished between two main organizational sources of stress. One is physical environmental stressors, such as light, noise, temperature, vibration, motion, and pollution in the air. The second type includes individual level stressors, such as role conflict, role ambiguity, overload, responsibility for people and career development stressors.

Humphrey (1982) has listed three factors which show individual differences with regards to stress:

1. A noxious stimulus factor demonstrates how different stimuli have damaging effects on different individuals (Wolff, 1968).

2. The personality factor includes the physical, social, emotional and intellectual aspects.

3. The sex factor relates to the contention that women are more prone to stress than men. It has been suggested that women are more vulnerable to stress as they take on roles outside the traditional housewife role.

Schafer (1978) has outlined several experiences which lead to distress. These are overload (Toffler in 1971 and Bellack in 1975 support this), understimulation, absence of meaning, role conflict, role ambiguity, transitions (geographic, role, or lifestyle), loss, and unfinished business (unaccomplished tasks or unexpressed emotions).

Several personal moderators of perceptions and appraisals of stress were reported by Jankovic. These included: age, sex, years of education, organizational position, experience, health status, and propensity to leave the organization. These factors have been investigated in several studies of educators with mixed findings (1983).

Identifying the Causes of Nursing Student Stress

General Student Stress

As of yet, no satisfactory answer has been found regarding the amount of stress which is optimal for students. Students "... develop when stress is great enough to challenge their prior modes of adaptation, but not so great as to induce defensive reactions" (Sanford, 1969:52). The question remains: when does the student call the challenging stressor a threatening one.

Researchers working with general student populations have reported the following factors to be stressful: grades, test-taking, finances, time management (Mullinix, Fadden, Broch and Gould, 1980), general academic concerns, sexuality, and interpersonal relationships (Beard, Elmore and Lange, 1982).

The debate as to whether or not nursing education is more stressful than other types of post secondary education has received attention in the literature. Middlewood (1946) pointed out that nursing students were expected to do a great deal more than the average collegiate student. Davis and Olesen added that the nursing student (from a hospital based program) is

> ... exposed to a variety of distressing sights, sounds and smells such as few of her agemates on college campuses or in the world-at-large will ever be called upon to witness, much less deal within a skilled and responsible fashion (1963:96).

This viewpoint has not been entirely supported in the recent literature. Jones (1978) contends that nursing students are continually placed in situations which are anxiety-producing and stressful. Carter suggests another viewpoint.

> Further, I question whether the distress observed in nursing students is related to the educational/clinical experiences or in fact is experienced in a similar manner by women in other undergraduate programs of study. In other words, is the observed phenomenon actually a developmental crisis or, as has been assumed, a situational crisis? (1982:248).

The Clinical Setting

A study in 1978 (Jones) surveyed nursing students by asking them to agree or disagree with the following question: "In nursing you meet many situations which cause you anxiety. " Not surprisingly, 90% (n=50) of those students surveyed agreed with the statement. The clinical area is the setting for many sources of nursing student stress and anxiety.

In a recent study by Selleck (1982), several incidents were found to create anxiety for nursing students. They include the following in descending order: initial clinical experience, evaluation, total patient care, interpersonal relationships with staff, and the quality of care and procedures.

Birch (1979) used a questionnaire to determine that 20% of nursing students experienced anxiety when engaged in clinical practice. Some of the high ranking items were: "dealing with patients with Cancer", "care of the terminally ill", "care of the dying", "night duty" and "ward changes". Jones (1978) found that all of the first year students surveyed perceived some anxiety for caring for a terminally ill patient. However, Gunter (1969b) found that of her nursing student sample, 79% were either seldom or practically never concerned about the death of a patient.

Stein (1969) found that 86% of the nursing students in her sample were concerned about too much impersonality of patient care and and neglect of the patient's emotional needs.

Personal Reasons

"Many life events, particularly those that disrupt everyday routines, cause stress" (Mancini et al., 1983:329). However, there are many intervening personal factors which can affect one's perception of stress. Hayes (1966) found that

> ... the more stress the student experienced from college activities, the more likely she was to have personal problems, or the more personal problems the student had, the more likely she was to experience stress from college (265).

Stages in the developmental process such as puberty, graduation, marriage and retirement are associated strongly with stress. As for concern regarding one's health, Gunter (1969b) found that 64% of the nursing students who answered the survey were either seldom or practically never concerned about their own physical health.

Gunter (1969b) found that 59% of nursing students surveyed were concerned either very frequently or fairly often about their home and family. Zambrana, Hurst and Hite (1979) found dual-earner families had more stress due to mother's employment outside the home. The findings of Sund and Ostwald (1985) do not support this contention. They found that paternal age, age of the children, family income and satisfaction with the income were significantly correlated with family stress scores. This is consistent with McCubbin and Patterson (1981) who found personal factors such as age and income as mediating factors in family stress.

As families progress though the developmental stages outlined by Duvall (1977), they can be affected by stressors caused by the process.

Variables within the family can affect how the family responds to stress (Sund and Ostwald, 1985).

For the working mother, there are additional sources of stress. Frustrations, anxieties and guilt feelings can cause conflict between roles of mother and worker (Sund and Ostwald, 1985). The same researchers indicated that 49% of the sample were very frequently or fairly often concerned about combining marriage and career. Steck (1981) stated that often guilt was present in females assuming "masculine" traits such as acquiring power and abandoning "feminine" traits.

Interpersonal Relationships

Interpersonal relationship conflicts, although not necessarily destructive, can often be stressful (Muff, 1982). Bailey (1980) found that interpersonal relationships were the leading cause of stress for intensive care nurses across the United States.

Family relationships have been identified as a major cause of stress (Mancini et al., 1983). Wallace (1978) supports this finding: the relationship between spouses is the main source of stress with parent-child relationships following closely.

Hillier found that the stresses which nurses were subjected to were often severe. Specifically, the nursing culture was found to: (1) depersonalize stress events such as pain and death, (2) inhibit interpersonal relationship conflicts at the expense of personal innovation using shame and ridicule as means of control, (3) inhibit the development of close personal and supporting ties between nurses, and (4) not allow room for the nurse to deal with personal consequences, either within or outside of the hospital (1981).

Torrop (1939) found in a survey of 278 nursing students that a lack of rapport existed between faculty and students. The students emphasized that they were afraid of the sarcasm and temper of their instructors. Fox and others in 1963 have supported this finding; students found their relationship with their clinical instructors to be moderately stressful. McKay in 1978 suggested the same phenomenon occurs more subtly today. She explained that students who voice their point of view may suffer reprisals such as altered grades or earning a reputation for being a "trouble maker."

In 1969, 108 senior nursing students, or 92.6% of the sample, were concerned that there was not enough communication with the physicians regarding patient welfare. Stein also reported that 62% of the students felt that physicians lacked respect for nursing reports and judgement. Kalisch and Kalisch added that conflict with physicians continues to be a major source of stress for some nurses (1982).

In a study of stressful experiences reported by nursing students, Garrett and others found that first year students were most concerned with clinical problems regarding patient care and relations with their superiors (1976). Birch (1979) supported this finding and reported that "being shown up on the wards in front of patients and staff" caused the greatest amount of stress for the nursing student.

Mauksch described the interpersonal relationships which takes place between nursing students:

> The common fate, the closed bonds, the enforced sharing of experience, all serve to develop a primary-group context within which individual experiences become common property. Particularly because individual crises and problems tend to threaten carefully guarded common thresholds and fears, any error in medication, any failure in class, or even trouble with the boyfriend becomes a threat to the group rather than a mere personal experience. Should a student withdraw from the school, the ripples of dismay can be observed like those on a lake into which a stone has been thrown (1965:334).

Role Insecurity

Van Sell, Brief and Schuler have defined role ambiguity as

> ... the degree to which clear information is lacking regarding (a) the expectations associated with the role, (b) methods for fulfilling known role expectations, and/or (c) the consequences of role performance (1981:44).

Kahn added that role ambiguity results from the discrepancy between the resources a person has to fulfill their role and the resources they need to perform their role adequately (1973). One effect of role ambiguity is that a person will experience anxiety (Burke and Belcourt, 1974).

Mauksch (1965) suggested that nursing students suffer from a role insecurity due to an early and forceful emphasis on professional behavior. A role transition occurs from self identification to professional behavior, and the new expectations are often not clear to the student.

> The training of a nursing student is an attempt to provide routines to cope with stressful tasks. This is not always successful; even less protection is afforded for students in their personal lives and in relationships with fellow workers.

> The "routinisation" of responses to emotional situations, by training the nurse to concentrate on the elements of the nursing task, is useful in some circumstances but not all (Hillier, 1981:28).

In the earlier literature, students identified their stage of development as an area of stress for them (Rosenberg and Fuller, 1955). In particular, the transfer from coed to nursing student, as well as entry into a dominant female profession, were deemed most stressful (Davis and Olesen, 1963).

Nursing students in the late adolescent period are dealing not only with conflicting tasks of growth and development, but also with concepts and situations incongruent with the responsibility and maturity usually demanded of persons of their age (McKay, 1978). Sobol (1978) added that these students may have had little opportunity to be responsible for another person's welfare before entering a nursing program.

Gunter (1969b) found that 90% of her sample were concerned about their ability to give nursing care. Fox and others (1963) found that the clinical instructor's expectation of student performance was very stressful for students. Sobol (1978) has supported this.

A major stress for students is intrinsic in our nursing schools. Many students have acquired the attitude that their knowledge and ability must be demonstrated in such a manner that there is no room for any margin of error. Strauss and Hutton explained that when this attitude is propagated by instructors, students become fearful and anxious; this reduces their ability to learn (Griffith and Bakanauskas, 1983). Several authors have found that nursing students are terrified to make any errors (Sobol, 1978; Stein, 1969). Another researcher added that 59% of the students surveyed were concerned very frequently or fairly often about making a mistake while caring for a patient (Gunter, 1969).

In 1955, Rosenberg and Fuller reported that sexual problems related to the profession were stressful for nursing students. Specifically, nursing procedures involving the intimate handling of patients presented possible sources of homosexual and heterosexual conflict. Although this source of stress has not been found in the literature recently, the same role conflicts and ambiguities exist today. This issue continues to be relevant for today's nursing student when dealing with patients with non-traditional sexual preferences.

There was one example found in the literature which related a positive effect of stress on nursing students (Parkes, 1982). Although student stress was found to be higher working on male wards than female wards, so was student performance and work satisfaction.

Role Conflict

Miles and Perreault define role conflict as "... the degree of incongruity or incompatibility of expectations communicated to a focal person by his/her role senders" (1976:21-22). An important type of role conflict is role overload. This is when a time conflict occurs between legitimate tasks; each task could be done consecutively but not at the same time (Kahn, 1969). Quantitative role overload is when a person has more legitimate tasks to do then he/she is able to do comfortably in a given period of time. Qualitative overload can occur when legitimate work requires abilities, skills and knowledge which are beyond the workers' capability to perform (Jankovic, 1983). Several sources support the contention that role conflict is directly related to tension and anxiety (French and Caplan, 1973; House and Rizzo, 1972).

Veninga (1979) suggested that all nurses experience stress when they are given responsibility without authority. An example would be when resources (i.e. supplies and time) are given to nurses without allowing them to determine their use. This usually occurs when someone else decides what supplies are to be used and how they are to be used without consulting with the nurse. When nurses must conform to the schedules of others, they are again denied the autonomy to decide how to best manage their time in order to accomplish their given workload.

A source of stress for students was found to be the difference between dream and reality (Mauksch, 1965). Dealing with the manipulation of the human body, death and the deeply ingrained value of modesty was deemed to be reality. Sobol (1978) described this conflict further:

> Fiction, television, recruitment materials and the applicant's self-expectations are not the most effective preparation for the inevitable conflicts and complexities (239).

Students are also caught between conflicting authorities and demands on their time. Stein (1969) and Heinemann (1964) have both supported this contention. Jones (1978) specifically pointed out that the main cause of stress for nursing students in the clinical situation was receiving instructions which were contrary to what the student had been taught. Heinemann (1964) added that unrealistic expectations of student performance lead to feelings of incompetence.

One study found that 58% of the students were either seldom or practically never concerned about carrying out a painful procedure on a patient. However, 51% of students found "learning to be 'professional' about painful experiences encountered in hospitals" either very difficult or quite difficult (Gunter, 1969).Birch reported contradictory results: "nursing patients in great pain" was found to be the second cause of anxiety at both eight months and 24 months of training (1979).

Role Overload

Over the past two decades, nursing students have been exposed to ever increasing amounts of technological data and refined techniques of patient care. Consequently, students have more knowledge to assimilate, more tasks to do, and more responsibilities to discharge. These conditions are a constant assault and energy drain upon an individual and could lead to an energy burnout (Jeglin-Mendez, 1982).

One study identified the constant and overpowering pressure related to work and studies as a main area of stress for nursing students (Rosenberg and Fuller, 1955). Recently, workload has also been reported by nurses to be a major source of stress (Muff, 1982). Watson (1982), a British researcher, reported that fatigue resulting from understaffed wards, irregular hours and frequent long stretches of duty were major contributors to the stress of nursing students. Jeglin-Mendez (1982) added that multiple patient assignments cause an increase in clinical anxiety.

Nahm (1948) found that students reported a lack of time to give adequate care to patients. Of the students in Stein's study, 92% felt concern over being too busy to give good nursing care (1969). Gunter (1969b) found that 74% of the students in her study were either very frequently or fairly often concerned regarding "feeling under pressure to finish a patient-care assignment and still do a good job." Jeglin-Mendez (1982) has also supported this view.

Gunter (1969b) found 99% of students were either very frequently or fairly often concerned with the pressure of school work. There have been several studies which support the finding that the major stresses experienced by nursing students are educational rather then clinical in nature (Gunter, 1969b; Hayes, 1966; Sobol, 1978). Garrett and others (1976) reported that nursing students in their final year found the most stressful experience as being related to academics. Specifically, this included pressures from exams, papers, schedules and homework. Jeglin-Mendez (1982) suggested that this stress may be related to the students learning multiple theoretical concepts and applying each concept to multiple or separate assignments.

Evaluation

Birch found that students ranked appraisal and written examinations high on the list with regards to anxiety (1979). Several researchers have supported this (Hayes, 1966; Kushnir, 1986).

Jeglin-Mendez contended that the anxiety about grades and the fear of "Will I make it?" constantly drained the student of energy (1982:32). One source found that out of 102 diploma nursing students within their first three weeks of school, 46.3% were afraid of failing. This was also found to be the second most prevalent concern among nursing students after eight months of school (Grassi-Russo, 1981).

In a 1978 study, a difference was found between the amount of stress associated with clinical assessment compared to classroom exams. Forty-six percent of the nursing students in the sample were very concerned about taking a practical assessment on the ward compared to the 28% who felt very anxious about taking an exam in the school (Jones). Gunter (1969b) found that evaluation of the student's clinical ability was most stressful when criticism was involved.

Novel Experiences

Kushnir found that the most stressful events reported by nursing students occurred in novel situations. That is to say, facing the unknown is a source of stress and anxiety for nursing students (1986).

Jones (1978) found that one of the main causes of stress in the clinical situation for the nursing student was being asked to carry out a complicated task for the first time. Sobol also reported that it is stressful for nursing students to adjust to a new program (1978).

Summary

This chapter has reviewed the related literature and conceptual frameworks related to the theory of stress. The present state of the literature regarding stress was first addressed followed by an exploration of several related conceptual definitions. The next section dealt with some of the conceptual frameworks pertaining to stress. The following sections reviewed the effects of student stress and general sources of stress. The rest of the chapter identified the causes of nursing student stress in some detail.

Several difficulties were found with the literature reviewed regarding nursing student stress. These concerns were related to the data base which supported some of the articles, methodological inconsistencies, a lack of lateness of the literature, and the applicability of the material to the college nursing student and their perceived stress.

Several concepts were defined and explored. These included: stress, stressor, anxiety, burnout and student. These concepts were found to have different interpretations in the literature. For example, one writer interchangeably used the words stress, burnout and anxiety.

Three main conceptual frameworks were discussed. These included the engineering, physiological and transactional models. Selye's physiological model and the transactional model were found to be the best suited to this study.

Generally, the effects of student stress were found to have a negative impact on the student. However, it was clear in the literature that some degree of stress was necessary for optimal performance. Effects of stress can be physical, psychological or a combination of both.

Several different methods of classifying general sources of stress were reviewed. One method distinguished between two types of organizational stress, others pointed out factors which showed individual differences when dealing with stress, and another outlined several experiences which ultimately lead to distress.

The main sources of nursing student stress were reviewed under the following subsections: general student stress, the clinical setting, personal reasons, interpersonal relationships, role insecurity, role conflict, role overload, evaluation and novel experiences. This section showed clearly that the literature is not entirely consistent with regards to exactly what is and what is not stressful for nursing students. However, several main sources have been identified in the literature which could contribute to the stress of nursing students.

CHAPTER 3

METHODOLOGY AND INSTRUMENTATION

Chapter 3 is divided into two sections. The methodology of the study is dealt with in the first section and includes the following areas: a description of the orientation to this thesis, permission for conducting the research, data collection procedures, ethical issues and methods of data analysis. The second section of this chapter discusses the development, validity and reliability of the instrument which was used.

Research Methodology

Orientation

Several orientations to research have been cited in the literature. Gardner (1978) has described four purposes for research which exist on a continuum. According to this author, research can be predictive, evaluative, explanatory and descriptive. The predictive end of this continuum can be illustrated by an experimental research design. The descriptive orientation lends itself nicely to describing an event or situation. Borg and Gall state that although a correlational design is inappropriate if one's intent is to determine a cause and effect relationship between variables, it may be useful to explore or suggest a relationship between two variables (1983).

The present state of the literature about nursing student stress is not sufficiently well developed to enable the researcher to use an experimental or predictive design. However, because some factors have been reported in the literature, it was possible to design this study so as to assess the degree of correlation between selected variables. Thus, the study could be classified as exploratory and correlational in nature. Correlations between the stress situations and individual, educational and structural characteristics will be examined.

Permission for Conducting the Research

In the spring of 1986, permission was granted to conduct this research by the participating institutions. This involved three Alberta colleges.

The process of obtaining permission to conduct this research was accomplished through the administrators of the appropriate nursing schools. The researcher contacted the administrators of each of the three nursing programs by letter and a follow-up telephone call. A copy of the proposal was given to each administrator together with a cover letter requesting their permission for their students to participate in this study.

Permission for a pilot study of twenty students from one nursing program was obtained. The proposed date agreed upon was the middle of

May. Interviews were set up to meet and discuss the proposal with the two nursing school administrators whose respective programs would be directly involved with the actual data collection. From these discussions, specific dates were set up in June when the researcher could meet with nursing students from each college. Both administrators stipulated, however, that they would first discuss the proposal with their faculty before granting permission for the conduction of this study.

Data Collection Procedures

As requested, college anonymity has been respected by referring to College A and College B throughout this document.

Pilot testing. Following approval by the department head of the college involved in the pilot study, contact was made with the appropriate course coordinators. Through these proficient organizers, a mutually agreed upon date and time was set up when both first and second year students would be able to respond to the questionnaire at the same time. There were nine students from each year who voluntarily participated. This occurred in the middle of May. As a result of this exercise, several questions were reworded as well as the the frequency descriptors of the situations.

Distribution and collection of questionnaires. After specific dates were set up with the nursing administrators, the details for conducting this research were organized by other faculty members. With the exception of the second year students from College A, the researcher was present to distribute and collect the completed questionnaires. Each questionnaire was distributed and collected in a separate brown envelope. Although a specific date and time were set up with the faculty of the second year students from College A, the appointment was unfortunately not kept. The researcher therefore gave the questionnaires in brown envelopes to the appropriate instructors with the request that they be collected and returned by mail to this researcher by the end of June. This entire process was accomplished by early July, 1986.

Table 3.1 displays the return rate of the questionnaires by college and year. Considering that the researcher was not present to distribute and receive the questionnaires from the second year students of College A, the return rate from this group (76%) was considered acceptable. However, one would expect the return rates from the other groups to be consistently well above 90%. The researcher was concerned with the return rate from the first year students from College B (74%) and discussed this concern with the appropriate nursing administrator. This discussion revealed that some respondents from the first year group might have indicated that they were second year students, since they had begun the second year of their course a few days before they completed the questionnaires. Five to seven students could possibly fall into this category. This misunderstanding has affected the data analysis of this study. The overall impact was less than first anticipated.

Table 3.1
Return Rate of Questionnaires

College	Year	Questionnaires Given Out	Received	Percentage Returned
A	1 (n=60)	54	51	94
A	2 (n=50)	50	38	76
B	1 (n=68)	42	31	74
B	2 (n=68)	66	65	98
Total		212	185	87

Ethical Issues

There was no difficulty with ensuring the anonymity of the respondents. There was no need to number the questionnaires to facilitate follow-up because the researcher was present during the administration and collection of the questionnaires, with the single exception noted above.

As mentioned previously, the nursing administrators of the two programs which were involved in the actual data collection requested that their colleges not be identified in this document. Therefore College A and College B have been used throughout this thesis.

Data Analysis

The data were keyed and verified by an independent source prior to data analysis. Since this study is exploratory in nature, there are several forms of statistical analysis which are appropriate. Descriptive statistical techniques such as means, standard deviations and frequency counts were used. Correlational analysis, as well as stepwise regression and analysis of variance were the exploratory techniques used to analyze the data.

In the third section of the questionnaire, an open ended question allowed the students to add any additional sources of stress they felt were not presented in the structured questionnaire items. A discussion of these responses will be presented later in this document.

Research Instrumentation

The Questionnaire

Likert-type response categories were used throughout the questionnaire. From a collection of multiple choice statements, the respondents chose one option. There are three separate parts to this instrument and each will be discussed below.

Part 1: Sources of Stress. The first part of the questionnaire consists of commonly occurring situations which may be experienced as stressful by college nursing students. The respondents were asked to indicate how often the situation has occurred in their experience, and how stressful they found that event when it occurred.

Part 2: Personal Data. This section asks demographic and educational background questions. This includes items such as age, gender, years of working experience, support from faculty and family, financial situation, dependents and educational background.

Part 3: General Information. The third part of the questionnaire contains items concerned with how much stress students felt they are under generally, and an open-ended question allowing students to include any areas of stress which they have experienced but were not included in the first part of the questionnaire.

There are several advantages gained by using a closed-ended, Likert-type questionnaire. One is that the respondents are given a complete list of possible responses, thus providing an opportunity to consider all possible answers before responding. Secondly, this type of question has a better chance of being addressed in the same frame of reference by all respondents as compared to open questions. The third reason, as Woodward and Chambers (1980:4) have put it, is that this type of questionnaire design is " ...useful for determining intensity of feeling ...."

It can be argued that in order to adequately study a concept such as stress, a multiple methodological approach would be desirable. There are several reasons why a single methodology was used for this study. The main reason for using this method for data collection has to do with researcher accessibility to the institutions and students. It was not the purpose of this researcher to cause more stress for these students. The time element was the key issue. At the time this questionnaire study was conducted, the students were studying for their final exams as well as being engaged in clinical rotations. After preliminary interviews with the appropriate administrators, it was evident that these students had very little extra time during the data collection period. Permission for conducting this study was ultimately given because it would only take a small amount of the student's time. Thus, for the reasons outlined above, a Likert questionnaire design was considered to be the most practical yet useful methodology for this situation.

Instrument Development

From the literature, and particularly from studies which have assessed stress of nurses (Wry, 1985), it was evident that there did not presently exist an appropriate questionnaire to measure stress experienced by nursing students in particular situations. It became apparent that a questionnaire would have to be designed for the purpose of this study.

The first section of the questionnaire was designed with some fore-thought as to potential major areas of stress for the nursing student as discussed in the literature. Although the categories arbitrarily chosen are separate, they are not in reality separate entities. Some of the situations under one category may also fit under another. The present state of the literature does not enable the researcher to establish completely independent categories. The numbers which are associated with each category correspond to the situational number in the questionnaire:

1. Role Conflict: 2, 6, 15, 26, 34, 49, 53, 60
2. Role Overload: 7, 8, 18, 33, 37, 42, 43, 48, 55
3. Role Insecurity: 3, 23, 24, 30, 32, 38, 39, 40
4. Evaluation: 1, 21, 29, 31, 52, 54
5. New Experiences: 12, 25, 44, 57
6. Interpersonal Relationships: 4, 11, 16, 17, 19, 27, 35, 36, 45, 47, 50, 56, 61
7. Institutional Factors: 46
8. Clinical Experience: 5, 9, 28, 41, 51, 58, 59
9. Personal Situation: 10, 13, 14, 20, 22

Validity and Reliability

Content and Face Validity

Content validity has been defined to be

> ...the degree to which the sample of test items represents the content that the test is designed to measure.... (It) should not be confused with face validity, which refers to the evaluator's appraisal of what the content of the test measures (Borg and Gall, 1983:276).

Although the situations presented in the questionnaire were based on the literature, it was very difficult to ensure that they were completely "...representative, in type and proportion, ... of the content

..." (Borg and Gall, 1983:236) to be tested. In order to work towards some degree of content validity, the following plan was proposed and implemented.

1. First of all, eight nurses who varied in background from nursing educators to bedside nurses reviewed the content and clarity of the questionnaire. Suggestions were made about wording of some questions as well as pointing out some specific ethical issues involved with conducting such a study. These comments were used to improve the quality of the questionnaire.

2. The participants in the pilot study were instructed to review the questionnaire, complete the answers, and make comments regarding the clarity, length, time taken, and the appropriateness of the situations. A total of eighteen students from both years of the basic diploma nursing program were involved in the accomplishment of this task.

Construct Validity

"Construct validity is the extent to which a particular test can be shown to measure a hypothetical construct" (Borg and Gall, 1983:280). The construct in question is that of stress. It can be argued that students may respond to a different construct, such as anxiety or burnout. This is difficult to control in this study because (1) there exists so many definitions and conceptual frameworks of the construct stress, and (2) the measurement and definition of psychological stress is subjective.

This study, however, has been designed to explore what the student perceives and not what is an external "reality." The "reality" becomes the situations the student perceives to be stressful. Although it was the researcher's intention that the definition included in the questionnaire would guide the frame of reference and definition of stress for the respondent, the actual measurement of stress was left to the respondent.

> The validity of the data from close-ended questions rests on the assumption that the alternatives or choices offered in the question are mutually exclusive and exhaustive (Platek, Pierre and Stevens, 1985:39).

The measurement tool is a Likert-type questionnaire. It has been designed so that all possible answers have been included; in other words, all responses are mutually exclusive, and taken together they are inclusive of all possible responses.

Reliability

Reliability has been defined by Borg and Gall (1983) as the " ...level of internal consistency or stability of the measuring device over time" (281). The Guttman Split-Half method was used to determine the internal reliability of this instrument. This method used the computations of the alternate responses of those questions dealing with the "frequency" and, secondly, with those questions dealing with the "stressfulness" of the situation. The Guttman Split-Half calculation for the "frequency" questions was 0.8426; the same calculation for questions dealing with "stressfulness" was 0.9358. Thus, for the purpose of this study, the questionnaire was considered to be reliable.

Summary

Data were collected entirely by a questionnaire which was specifically designed for this study. The situations which appear in the first part of the questionnaire were obtained from the literature and the researcher's experience. Input from other nurses as well as the pilot study completed by college nursing students facilitated clarification of wording and order of questionnaire items.

The questionnaire was given to both first and second year students of nursing diploma programs from two Alberta colleges. Because the researcher was able to be present for the distribution and collection of the questionnaires with each group, except the second year students at College A, an acceptable return rate was achieved. However, there is a possibility that some of the students from the first year group from College B inadvertently indicated that they were in fact second year students.

The statistical data analysis included frequency counts, standard deviations, means, factor analysis, regression, and correlational techniques.

CHAPTER 4

THE RESPONDENTS AND THEIR PROGRAMS

The individual characteristics of the respondents are described in this chapter. Structural and educational characteristics of College A and B are also discussed. Thus a profile emerges of the participants in this study and the programs in which they were enrolled.

Individual Characteristics

The individual characteristics of the respondents included age, gender, educational background, marital status, presence and number of dependents, years of work completed before entering the 2-year nursing diploma program, present employment status, financial situation, and faculty and family support.

Age

More than 60% of the nursing students who responded were between 20 to 29 years of age. Eighty-four students (45.4%) were in the category 20 to 24 years of age. Twenty-seven respondents (14.6%) were less than 20 years. Forty five of the students (24.4%) were thirty years or older with nearly 5% being 40 years or older (See Table 4.1.)

Gender

The respondents were predominantly female. There were only 12 men (6.5%) who participated in this study. The female nursing students numbered 173 or 93.5%. (See Table 4.1.)

Educational Background

Five response categories for educational background were provided. The category selected most frequently was high school graduation: 137 students (74.1%) indicated that they had completed Grade 12. Approximately twenty percent of the respondents indicated that they had completed some type of post-secondary education before beginning their present program. (See Table 4.2.)

Marital Status

Over 55% of the respondents were single. Sixty-seven (36.2%) were married, fourteen (7.6%) were divorced and one (0.5%) was widowed. (See Table 4.2.)

Dependents

There were 122 respondents (65.9%) who reported that they had no dependents. Over 34% of the students who participated indicated that they had at least one dependent.

Table 4.1
Age and Gender of the Respondents

Category	Frequency (n=185)	Percentage
	Age	
less than 20 years	27	14.6
20-24 years	84	45.4
25-29 years	29	15.7
30-34 years	21	11.4
35-39 years	15	8.1
40 or more years	9	4.9
	Gender	
female	173	93.5
male	12	6.5

Table 4.2
Educational Background and Marital Status

Category	Frequency (n=185)	Percentage
Educational Background		
not completed Grade 12	1	0.5
completed Grade 12	137	74.1
completed diploma	34	18.4
completed university degree	4	2.2
other	9	4.9
Marital Status		
single	103	55.7
married	67	36.2
widowed	1	0.5
divorced	14	7.6

The number of dependents a student claimed ranged from one to four or more. Twenty-two respondents, 11.9% of the total sample or 34.4% of the sample with dependents, claimed one dependent. Of those students who claimed to have dependents, over 23% or 15 students indicated that they had four or more dependents. This amounts to over 8% of the total sample. (See Table 4.3.)

Years Employed Before Entry into Program

Only 31.4% or 58 students indicated that they had not completed a year of employment before entering their respective programs. Thirty (16.2%) had worked one year, fifty (27%) had worked two to five years, thirty-five (18.9%) had worked six to ten years, and 10 (5.4%) answered that they had worked over ten years before entering their programs. (See Table 4.4.)

Present Employment Status

Almost three-quarters of the respondents indicated that they were not employed at the time the questionnaire was completed. The rest of the respondents indicated that they were employed from less than ten hours per week up to full time hours. It was interesting to note that five students, or almost three percent of the population, were employed more than 25 hours per week while attending their programs. (See Table 4.4.)

Table 4.3
Presence of Dependents and
Number of Dependents

Category	Frequency (n=185)	Percentage
	Dependents	
yes	64	34.1
no	121	65.9
	Number of Dependents	
1	22	11.9
2	13	7.0
3	14	7.6
4	7	3.8
5 or more	8	4.3
none	121	65.4

Table 4.4
Years Employed Before Entry Into Program
and Present Employment Status

Category	Frequency (n=185)	Percentage
Years Worked Before Entry into Program		
0	58	31.4
1	30	16.2
2-5	50	27
6-10	35	18.9
more than 10	10	5.4
other response	2	1.1
Present Employment Status		
not employed	132	71.4
less than 10 hours/wk	21	11.4
10-25 hours/wk	25	13.5
more than 25 hours/wk	2	1.1
full time	3	1.6
other response	2	1.1

For the next three items, financial, family and faculty support, the students indicated how much each factor was a problem for them on a 4-point scale. There was a difficulty with reporting these findings since only the first and last choice were given a corresponding written description. To aid the understanding of the reader, it was arbitrarily decided to assign written descriptions to choices two and three. Therefore, choice two will also mean "a minor problem" and choice three will mean "a moderate problem."

Financial Support

Of the students who replied to this question, approximately one quarter of the respondents fell into each of the four categories provided. These categories ranged from 'not a problem' to 'a serious problem.' (See Table 4.5.)

Family Support

Generally, the students did not feel that family support was a problem for them. There were 115 (62.2%) students who indicated that no problem existed. Although 69 (37.3%) respondents indicated that some degree of problem existed, only four students (2.2%) indicated that family support was a serious problem for them. (See Table 4.5.)

Faculty Support

As with family support, students generally felt that faculty support was not a problem; over half of the students (53%) indicated that a problem did not exist. However, it is worthy to note that 21 (11.4%) indicated that faculty support was a moderate or serious problem for them. (See Table 4.5.)

Structural Characteristics

College

The nursing students from both College A and College B were evenly represented in the study. Forty-eight percent of the students (n=89) were from College A and 52% of the students (n=96) were from College B. (See Table 4.6.)

Program Year

There were approximately ten percent more second year students who participated in the study compared to first year students. A total of 81 (43.8%) first year students responded compared to 103 (or 55.6%) second year students. (See Table 4.6.) The reader is reminded that the actual differences in numbers may be less than what is reported here, because of a possible misunderstanding on the part of a small number of first year students.

Number of Nursing Students per Clinical Instructor

The responses to this question varied between four to eight students per clinical instructor. The most frequent category chosen was

Table 4.5
Financial, Family and Faculty Support

Category	Frequency (n=185)	Percentage
	Financial Support	
1-not a problem	48	25.9
2-a minor problem	50	27.0
3-a moderate problem	46	24.9
4-a serious problem	39	21.1
other response	2	1.1
	Family Support	
1-not a problem	115	62.2
2-a minor problem	38	20.5
3-a moderate problem	27	14.6
4-a serious problem	4	2.2
other response	1	0.5
	Faculty Support	
1-not a problem	98	53
2-a minor problem	64	34.6
3-a moderate problem	14	7.6
4-a serious problem	7	3.8
other response	2	1.1

Table 4.6
College and Year of Program and the Number of Nursing Students per Clinical Instructor

Category	Frequency (n=185)	Percentage
	College	
College A	89	48
College B	96	52
	Program Year	
1	81	43.8
2	103	55.6
other response	1	.5
	Number of Nursing Students per Clinical Instructor	
4	6	3.2
5	29	15.7
6	125	67.6
7	10	5.4
8	9	4.9
other response	6	3.2

one clinical instructor for six students. This was indicated by 125 (67.6%) respondents. (See Table 4.6.)

Educational Characteristics

Time Element

The programs of the two colleges were analyzed using program documents provided by the colleges. College A and College B are almost identical in terms of the proportion of time which is allotted for nursing theory, nursing practical and support courses. Although both programs consist of a 64% practical component, College A has approximately 120 more hours of clinical practice than College B. The total number of hours designated to support courses and nursing theory courses was also found to be greater at College A.

Support Courses

There are many similarities between nursing programs at College A and College B; both have six common support courses. However, the total number required at each institution is different; College A insists upon ten whereas College B requires only eight. The common six courses include three in Psychology, two in Biology, and one in English. The two additional courses required by College B are Sociology and Microbiology. The extra courses required by College A are Physical Chemistry, Microbiology and Exercise Weight Control. It appears, however, that the support courses required at College B are

Table 4.7
Time Breakdown of Programs at
College A and College B

Program Component	Hours	Percentage
	College A	
nursing theory	436	17
support courses	512	19
nursing practical	1696	64
Total	2644	
	College B	
nursing theory	405	16
support courses	492	20
nursing practical	1575	64
Total	2472	

university transferable while those required at College A are not readily acceptable by universities.

Summary

Individual characteristics of the respondents were reported in this chapter. The majority of respondents were between the ages of 20 to 29 years of age (60%), had completed Grade 12 (74%), were single (55%), had no dependents (66%), had worked at least one year before entering the program (69%), and were presently not employed (71%). Approximately 75% of the respondents indicated that financial support was a problem to some degree. Family support was not a problem for 62% of the students who responded, and neither was faculty support seen as a problem for 53% of the respondents.

Structural and educational characteristics of both College A and B were also described in this chapter. Both colleges were evenly represented in this study: 48% of the students were from College A and 52% were from College B. Approximately 10% more of the respondents indicated that they were in their second year compared to being in their first. There were between four to eight students per clinical instructor, with six students per clinical instructor being the average.

The educational characteristics of Colleges A and B are very similar with few differences. Upon comparison, it appears that College A and B are almost identical in terms of the proportion of time allotted for nursing theory, nursing practical and support courses. There are also many similarities between the support courses both programs require. The main differences are that College A requires two extra courses compared to College B, and that the support courses of College B are university transferable.

CHAPTER 5

DATA ANALYSIS I: STRESS SITUATIONS

First, this chapter presents the overall experience of stress as reported by the respondents. This is accomplished by presenting the stress-related situations in categories according to the stress means. The data are then analyzed according to college and year of nursing program. This chapter also presents an analysis of the frequency and the stressfulness of 61 stress-related situations. Items most and least stressful as well as those which were most and least frequent are listed. The correlations between stressfulness and frequency according to college and year of the nursing program are also examined. In the final section of this chapter, the responses to the open-ended question are reported.

Overall Intensity of Stress

In the final section of the questionnaire, two general questions were asked of the respondents. One dealt with the amount of stress associated with being a student, and the other with the amount of stress associated with becoming a student. These two questions were included to ascertain an overall stress level of college nursing students.

Table 5.1 outlines the student response to these two questions. Sixty-nine respondents (37%) reported that being a student was either very or extremely stressful. In the same vein, 66 or 35.7% of the students responded that the amount of stress involved in becoming a student was also very or extremely stressful.

Figures 5.1 and 5.2 display in bar graph form the mean responses of these two questions for students from each year and college. The average amount of stress associated with being a student was 3.26 (3.0 being moderately stressful and 4.0 being very stressful). The sample mean for the stress associated with becoming a nursing student was 3.15 on the same scale.

For the question "On the average, how stressful is it for you to be a student in your nursing program," the students at College B have indicated a higher level of overall stress than the students at College A. The average stress score at College B was 3.30 for first year students and 3.47 for second year students. The mean score for stress reported by first year College A students was 2.94 (2.0 being mildly stressful and 3.0 being moderately stressful) and for second year students was 3.31.

Figure 5.2 presents a pattern similar to Figure 5.1. For the question "How stressful was it for _you_ to adjust to the process of becoming a nursing student?", the respondents indicated that the average stressfulness involved was again higher for students at College B than

Table 5.1
Average Amount of Stress Associated with Being a Student
and the Amount of Stress Associated with
Becoming a Student

Category	Frequency (n=185)	Percentage
	Average Amount of Stress Being a Student	
Not Stressful	3	1.6
Mildly Stressful	27	14.6
Moderately Stressful	85	46.0
Very Stressful	58	31.4
Extremely Stressful	11	5.9
other response	1	0.5
	Amount of Stress Involved in Becoming a Student	
Not Stressful	9	4.9
Mildly Stressful	32	17.3
Moderately Stressful	78	42.1
Very Stressful	54	29.2
Extremely Stressful	12	6.5

Figure 5.1
Average Stress Associated with Being a Student
According to College and Year of Program

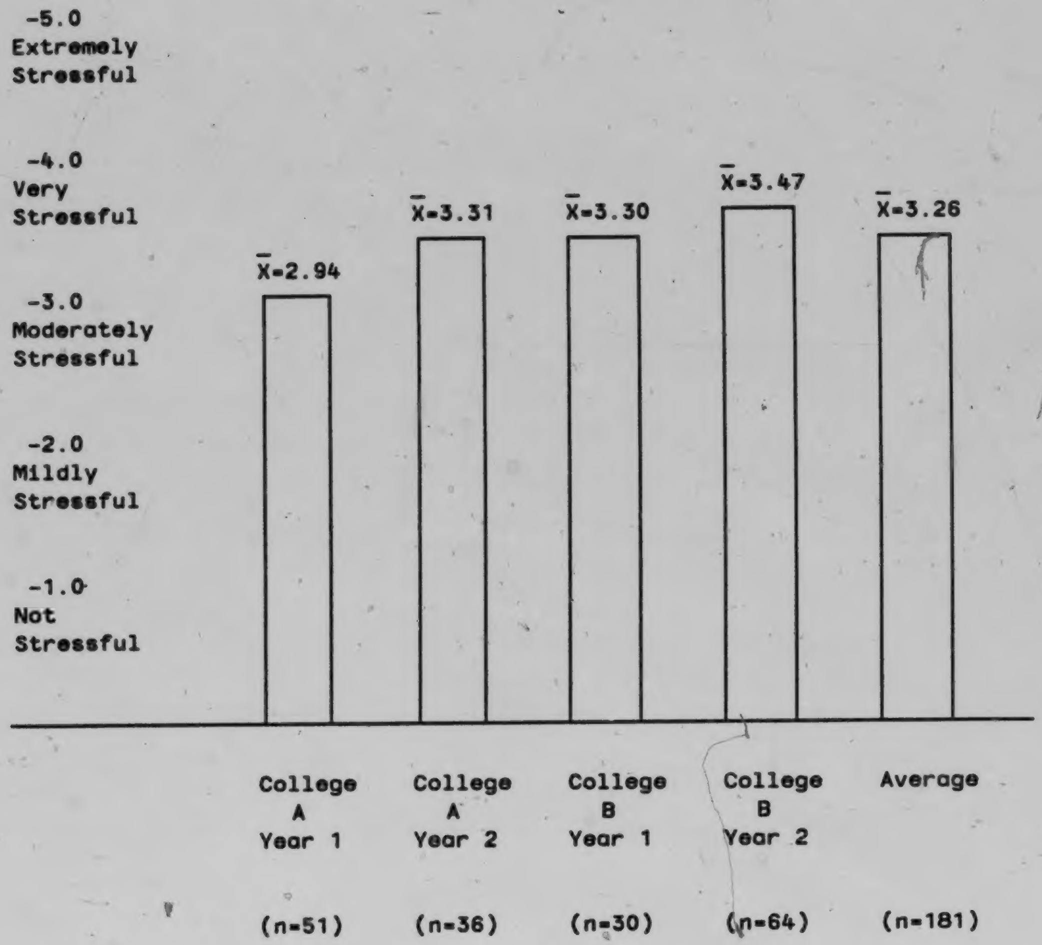
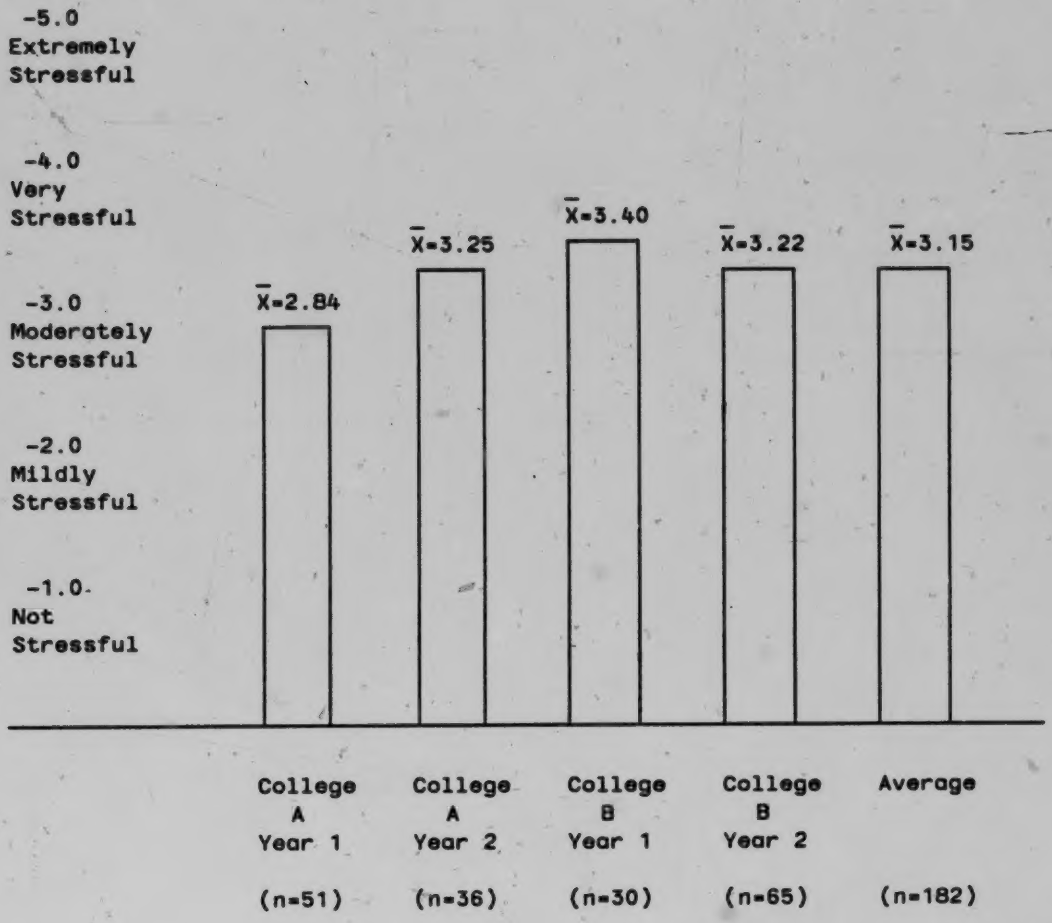


Figure 5.2
Stress Associated with the Adjustment to Being a Student
According to College and Year of Program



for College A. First year College B students showed a mean of 3.40, while the second year students indicated a mean of 3.22. At College A, the stress means were lower with the first year students being at 2.84 and the second year students being at 3.25.

Intensity of Stress

The 61 stress situations were rank ordered according to the amount of stress and are displayed in Table 5.2. The corresponding frequency means also appear in this table. The reader is reminded that the stress mean is the average amount of stress per stress-related situation which the students have experienced based on a six-point Likert scale. The six possible choices were as follows: 0 was used as the code if the situation had not occurred, 1 meant not stressful, 2 meant mildly stressful, 3 meant moderately stressful, 4 meant very stressful, and 5 meant extremely stressful.

The stress situations in Table 5.2 were broken down into several categories which correspond to the levels of stress the participants chose in the questionnaire. There were 13 situations with means between 3.78 and 3.08, which is the moderate to very stressful range. Thirty-four mildly to moderately stressful situations were found with means ranging between 2.71 and 2.18. Twelve situations were located in the not stressful to mildly stressful range. Only two items which had means below 1.0 fell between the categories of not stressful and situations which had not occurred for the respondents.

The ten most stressful situations fell within the category moderately to very stressful; the range of the means of these situations was 3.78 to 3.23. It is interesting to note that six of these ten situations would be encountered by students in any program of study; only four situations are specific to nursing as a field of study. The means of the five least stressful items were between 1.26 to 0.34.

Frequency of Occurrence

The frequency mean indicates the average occurrence per stress-related situation which the students have experienced based on a five-point Likert scale. The possible choices for this scale were as follows: 1 meant the situation had never occurred, 2 meant that the situation had occurred one to two times per year, 3 meant one to two times per month, 4 meant one to two times per week, and five meant almost every day.

The ten most frequently occurring stress situations appeared to correspond mainly to items with a higher stress mean. The ten most frequent items were: developing clinical skills to an acceptable level of performance, working with female patients, knowing your instructor expects 'professional' behavior in the clinical setting, maintaining a good rapport and cooperating with all peers, maintaining a good rapport with instructors, commuting to school, working with male patients, resolving time demands of school with time demands of personal life, feeling that your social life is restricted due to heavy school

Table 5.2
Rank Order of Stress-Related Situations
According to Stress Mean Scores

Rank	Stress-Related Situations	Frequency Mean	Stress Mean
	Moderately to Very Stressful Situations		
1	Writing an exam.	3.01	3.78
2	Having more class assignments then you feel you can manage.	3.05	3.53
3	Discovering your final grades in nursing courses.	3.59	3.46
4	Having too much work to do in too little time in the clinical area.	3.26	3.45
5	Wondering if you will be able to complete your program.	3.09	3.41
6	Doing a new procedure which your clinical instructor has requested you to do.	3.23	3.29
7	Dealing with others who make you feel that you do not know what you are doing.	2.53	3.29
8	Completing reports and papers by a set deadline.	3.01	3.27
9	Resolving time demands of school with time demands of personal life.	3.81	3.23
10	Rotating to new clinical areas or institutions.	3.51	3.23
11	Feeling that you give unsatisfactory nursing care.	2.22	3.10

Table 5.2 (cont)
Rank Order of Stress-Related Situations According to Stress Mean Scores

Rank	Stress-Related Situations	Frequency Mean	Stress Mean
12	Feeling yourself in conflict with your family or those people significant to you.	2.92	3.08
13	Thinking about causing a medication or treatment error.	3.12	3.08
14	Receiving contradictory instructions from instructors and ward nursing staff.	2.68	3.01
	Mildly to Moderately Stressful Situations		
15	Receiving contradictory instructions from different instructors.	2.73	2.94
16	Feeling intimidated by nursing instructors.	2.36	2.93
17	Feeling that your social life is restricted due to heavy school assignments.	3.71	2.90
18	Feeling unprepared for patient assignment.	2.15	2.86
18	Receiving unclear instructions or expectations from an instructor regarding class presentations, papers, or examinations.	2.45	2.86
19	Juggling extracurricular activities and your school work.	3.57	2.78
20	Caring for a patient who is critically ill.	2.75	2.76
21	Causing a medication or treatment error.	1.61	2.75

Table 5.2 (cont)
Rank Order of Stress-Related Situations
According to Stress Mean Scores

Rank	Stress-Related Situations	Frequency Mean	Stress Mean
22	Developing clinical skills to an acceptable level of performance.	4.64	2.73
23	Feeling too much responsibility in the clinical situation.	2.39	2.72
24	Being unsure of the financial support needed to continue one's studies and maintain one's family.	2.41	2.71
25	Feeling intimidated by doctors.	2.72	2.70
26	Doing a painful procedure to a patient.	3.03	2.67
27	Being given a final grade in the clinical area.	2.36	2.66
27	Observing a painful procedure done to your patient.	2.98	2.66
28	Feeling insecure about your role in marriage or with others significant to you.	2.60	2.61
29	Doing a new procedure which a ward staff has asked you to do.	2.68	2.60
30	Feeling in conflict with ward nursing staff.	2.19	2.60
31	Being criticized by the ward nursing staff for a mistake which you have committed.	1.78	2.57
32	Having too many home responsibilities.	3.22	2.56
33	Dealing with the institutional bureaucracy of your program.	2.59	2.51

Table 5.2 (cont)
Rank Order of Stress-Related Situations
According to Stress Mean Scores

Rank	Stress-Related Situations	Frequency Mean	Stress Mean
34	Failing to locate your clinical instructor when you feel that you need her in the clinical area.	3.06	2.48
35	Dealing with an unhappy home situation.	2.04	2.39
36	Feeling that your instructor has set unrealistic expectations for your performance.	1.87	2.38
37	Feeling in conflict with ward nursing staff.	2.01	2.38
38	Dealing with family illness.	1.92	2.34
38	Feeling yourself in conflict with a nursing instructor.	1.79	2.34
39	Supporting a peer who has failed an examination or has been asked to leave the program.	2.08	2.31
40	Failure to receive adequate instructor feedback regarding your performance.	2.07	2.30
41	Talking with your instructor over one of your marked assignments.	2.07	2.27
42	Feeling in conflict with peers.	2.07	2.23
43	Caring for a dying patient.	2.04	2.19
44	Dealing with one's own health problems.	2.23	2.18

Table 5.2 (cont)
Rank Order of Stress-Related Situations
According to Stress Mean Scores

Rank	Stress-Related Situations	Frequency Mean	Stress Mean
	Not Stressful to Mildly Stressful Situations		
45	Knowing your instructor expects 'professional' behavior in the clinical setting.	4.46	2.00
46	Caring for a patient who speaks a language different from your own.	2.07	1.95
47	Maintaining a good rapport with instructors.	3.94	1.89
48	Maintaining a good rapport and cooperating with all peers.	4.41	1.84
49	Caring for a patient with a communicable disease.	1.91	1.67
50	Caring for a patient with an ethnic background different from your own.	3.05	1.49
51	Working with male patients.	3.89	1.47
52	Commuting to school.	3.92	1.44
53	Taking an oral exam.	1.71	1.41
54	Dealing with a patient who is sexually aggressive.	1.55	1.26
55	Working with female patients.	4.58	1.16
56	Feeling intimidated by instructors who teach non-nursing courses.	1.55	1.13

Table 5.2 (cont)
Rank Order of Stress-Related Situations According to Stress Mean Scores

Rank	Stress-Related Situations	Frequency Mean	Stress Mean
	Not Stressful Situations or Situations Which Have Not Occurred		
57	Feeling in conflict with an instructor who teaches a non-nursing course.	1.42	0.87
58	Dealing with a patient who has tendencies toward homosexual behavior.	1.20	0.34

assignments, and discovering your final grades in nursing courses. The frequency means of these items (4.64 to 3.59) ranged from occurring several times a week to several times a month.

The five least frequently occurring situations included four out of five of the least stressful situations. The five least frequently occurring situations were: dealing with a patient who has tendencies toward homosexual behavior, feeling in conflict with an instructor who teaches a non-nursing course, feeling intimidated by instructors who teach non-nursing courses, dealing with a patient who is sexually aggressive, and causing a medication or treatment error. The frequency means for these five items were between 1.20 and 1.61. This means these situations occurred less frequently than one to two times per year.

Correlation Between Frequency and Stressfulness

The correlation coefficients for frequency and stressfulness according to college and year of program are presented in Table 5.3. There was an overall positive relationship between frequency and stressfulness which was significant at the 0.05 level. This relationship is evident by the scattergram depicted in Figure 5.3.

It is interesting to note that the responses for first year students from both colleges are positively related for frequency and intensity of the stress situation. Although College B second year students showed a correlation between frequency and stressfulness which is statistically significant at the 0.05 level, there was no significant

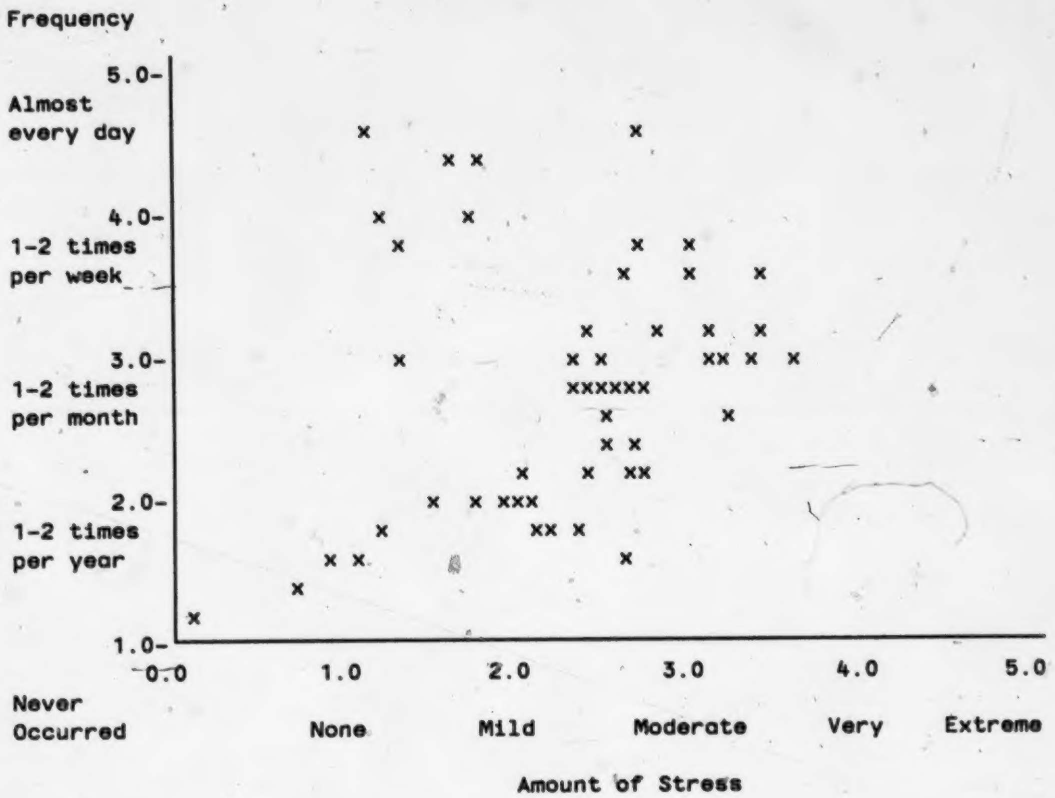
Table 5.3
Pearson Correlation Coefficients of the Frequency
and Stressfulness of 61 Stress Situations
By College and Year of Program

College	Year	Correlation (R)
College A	1	0.318**
College A	2	0.123
College B	1	0.336**
College B	2	0.287*
Total sample		0.242*

* Difference significant at the 0.05 level

** Difference significant at the 0.01 level

Figure 5.3
Scattergram Displaying Correlation Between Frequency
and Amount of Stress of 61 Stress Situations
from the Total Group



correlation found between frequency and stressfulness for the second year College A students.

Content Analysis of the Open-Ended Question

In the questionnaire, the respondents were requested to answer one open-ended question. This question was: "Please elaborate if you feel that there are major sources of stress for you which have not been included in this questionnaire." The responses were organized under three main headings with several categories under each heading. Although many of the areas identified by the respondents were already in the questionnaire, several comments indicated situations which had not been included. Responses to the open-ended question are reported in this section. Approximately one quarter of nursing students responded to the question.

Related to the Nursing Program

The respondents indicated concern with four specific areas related to their nursing program. These concerns related to instructors, assignments, clinical practice, and the college organizational bureaucracy. Each of these areas will be discussed below.

Instructors. Many respondents commented on this theme. Their concern was with the high expectations of instructors and the "inconsistency of instructor expectations." The other area identified was instructors who prejudge an evaluation based on previous negative evaluations.

Assignments. This was a common concern throughout the open ended responses. Such matters as the following were commented on: the dates assignments and presentations were due, readings, and term papers. It was felt that there was too much to do in too short a time. Some assignments were thought to be useless or repetitious.

Clinical practice. Two main concerns were expressed which dealt with clinical practice. One identified stress related to varying rotations and the second reported a divergence in expectations between the hospital and the college. One comment was made regarding the added stress which results when ward nursing staff ridicule nursing students. Some students reported a very stressful event as being when fellow nursing students who had shown themselves to be unsafe in the clinical area were not given extra assignments so as to achieve competency.

College organizational bureaucracy. There were two main areas identified within this category by the respondents. One was when students are not credited for past knowledge and/or experience. The other related area was concerned with the difficulty students experience when they transfer to their present program from another.

Related to Personal Life

Three main areas related to the student's personal life were considered to be stressful: family issues, financial issues and other issues.

Family issues. These included such areas as the stress and illness of the respondents' children. Several students mentioned the death of a child or another family member. Two students reported that husbands who were not emotionally supportive were additional sources of stress.

Financial issues. Financial support was identified as a critical source of stress.

Other issues. Respondents commented on other areas of stress not addressed in the questionnaire. These areas included: living arrangements, pregnancy, the older student, the slower reader, lack of faculty support, moving, lack of sleep, and gaining 20 lbs. of weight.

Related to Feelings Toward Self

The comments made in this section stemmed around the theme of uncertainty. One student wrote that stress came from insecurities, lack of self assurance and the self esteem level involved in becoming a nurse. One respondent reported that the transition from student to staff nurse, or "reality shock," was a source of stress.

Uncertainty regarding the choice of nursing as a career was listed as a stressor. The fear of not succeeding at this program and having to deal with family disappointment was also mentioned.

Another student reported that "at present I'm having a lot of stress just dealing with myself."

This summary of the respondents' comments to the open-ended questions was based on direct statements made by the students. Although the students who responded did not directly indicate how stressful one particular area was over another, these comments do indicate sources of stress which the students felt were not included in the questionnaire.

Summary

Over 70% of the respondents indicated that the amount of stress associated with both being and becoming a nursing student was at least moderately stressful; it is important to note that over 35% of the respondents indicated a stress level between very to extremely stressful. The respondents from College B expressed a higher level of stress than the respondents from College A and, generally, second-year students indicated a higher level of stress than their first year counterparts.

The five most stressful situations were identified to be: writing an exam, having more class assignments then you feel you can manage, discovering your final grades in nursing courses, having too much work to do in too little time in the clinical area, and wondering if you will be able to complete your program. The two least stress-producing situations were feeling in conflict with an instructor who teaches a non-nursing course, and dealing with a patient who has tendencies toward homosexual behavior.

The ten most frequently occurring stress situations appeared to correspond mainly to items with a higher stress mean. Overall, a positive significant relationship was found between the frequency and stressfulness associated with each potentially stress-related situation.

The responses to the open-ended question gave the respondents the opportunity to indicate other sources of stress not included in the questionnaire. These responses were organized under three main headings with several categories under each heading. Of those concerns related to the nursing program, sources of stress stemmed from the instructors, assignments, clinical practice and the college organizational bureaucracy. Several issues were identified which related to the personal life of the student; these fell under the categories of family and financial matters. The other main area of stress expressed by the respondents related to feelings towards self.

CHAPTER 6

DATA ANALYSIS II: FACTOR ANALYSIS

The responses to the 61 stress situations were factor analyzed by varimax rotation. Factor solutions from six to ten were analyzed, and the six-factor solution seemed to be the most useful. The six factors and the factor loadings on each item have been reported in Table 6.1. Items were selected for inclusion in each factor if they met the following criteria:

1. Items must load at 0.40 or greater.
2. Each item must load on one factor only. Therefore, items which loaded at 0.40 or higher on more than one factor were rejected.
3. The items associated with each factor must logically contribute to the meaning of that factor.

There were nine items which did not load at 0.40 or above. These have been listed with their loading scores in the last section of Table 6.1. These items were: causing a medication or treatment error, dealing with a patient who has tendencies toward homosexual behavior, dealing with one's own health problems, doing a new procedure which a ward staff member has asked you to do, feeling intimidated by doctors, receiving unclear instructions or expectations from an instructor

Table 6.1
Varimax Factor Solution for 61 Stress Situations
Using Six Factors (n=181)

	Factors and Factor Loading (÷100)					
	1	2	3	4	5	6
Factor 1 - Expectations Regarding Performance						
Developing clinical skills to an acceptable level of performance.	66	18	19	22	-01	08
Discovering your final grades in nursing courses.	64	23	14	-01	02	23
Rotating to new clinical areas or institutions.	60	18	04	25	19	-02
Knowing your instructor expects "professional behaviour in the clinical setting.	56	04	19	35	-07	07
Feeling that you give unsatisfactory nursing care.	54	17	02	28	17	06
Having too much work to do in too little time in the clincal area.	54	32	18	04	28	19
Doing a new procedure which your clinical instructor has requested you to do.	50	42	03	35	11	-04
Having more class assignments than you feel you can manage.	49	35	42	-02	09	15
Observing a painful procedure done to your patient.	47	31	-01	-06	55	07
Wondering if you will be able to complete your program.	47	18	17	22	10	18
Dealing with others who make you feel that you do not know what you are doing.	44	32	21	34	23	-03
Being given a final grade in the clinical area.	44	19	21	19	14	-05
Thinking about causing a medication or treatment error.	43	19	10	21	14	20
Maintaining a rapport and cooperating with all peers.	40	-17	29	44	14	-08

Table 6.1 (cont)
Varimax Factor Solution for 61 Stress Situations
Using Six Factors (n=181)

	Factors and Factor Loading (÷100)					
	1	2	3	4	5	6
Factor 2 - Conflict and Anxiety						
Feeling in conflict with ward nursing staff.	04	70	09	22	19	14
Feeling in conflict with ward nursing staff.	14	68	14	13	16	04
Completing reports and papers by a set deadline.	33	56	33	-07	-12	08
Receiving contradictory instructions from different instructors.	29	55	11	06	07	09
Feeling unprepared for patient assignment.	22	55	08	41	07	22
Writing an exam.	39	49	28	-04	07	05
Receiving contradictory instructions from instructors and ward nursing staff.	37	48	10	15	30	25
Failing to locate your clinical instructor when you feel that you need her in the clinical area.	22	47	15	24	-00	-30
Doing a painful procedure to a patient.	37	46	00	-03	43	09
Feeling your instructor has set unrealistic expectations for your performance.	08	45	13	43	09	06
Doing a new procedure which your clinical instructor has asked you to do.	50	42	03	35	11	-04

Table 6.1 (cont)
Varimax Factor Solution for 61 Stress Situations
Using Six Factors (n=181)

	Factors and Factor Loading (+100)					
	1	2	3	4	5	6
Factor 3 - Personal Demands						
Having too many home responsibilities.	29	06	70	10	-11	15
Dealing with an unhappy home situation.	-07	07	69	15	05	02
Resolving time demands of school with time demands of personal life.	36	18	63	11	11	24
Feeling yourself in conflict with your family or those people significant to you.	33	17	62	12	10	05
Commuting to school.	07	04	51	13	05	-14
Feeling insecure about your role in marriage or with others significant to you.	38	08	50	16	07	-10
Being unsure of the financial support needed to continue one's studies and maintain one's family.	02	30	48	02	19	10
Juggling extracurricular activities and your school work.	33	06	46	15	18	37
Dealing with family illness.	-05	20	44	08	25	20
Feeling that your social life is restricted due to heavy school assignments.	33	10	43	26	14	25
Having more class assignments than you feel you can manage.	49	35	42	-02	09	15

Table 6.1 (cont)
Varimax Factor Solution for 61 Stress Situations
Using Six Factors (n=181)

	Factors and Factor Loading (÷100)					
	1	2	3	4	5	6
Factor 4 - Student Relationships						
Feeling yourself in conflict with a nursing instructor.	-04	27	20	61	16	29
Maintaining a good rapport with instructors.	10	07	35	54	-05	09
Failure to receive adequate instructor feedback in your performance.	15	27	04	52	36	12
Feeling intimidated by nursing instructors.	38	27	11	49	14	22
Feeling in conflict with peers.	12	17	31	48	00	-04
Taking an oral exam.	18	-01	01	46	-02	24
Maintaining a good rapport and cooperating with all peers.	40	-17	29	44	14	-08
Working with female patients.	11	-01	-28	44	09	06
Feeling your instructor has set unrealistic expectations for your performance.	08	45	13	43	09	06
* Feeling too much responsibility in the clinical situation.	34	18	14	41	16	-15
Feeling unprepared for patient assignment.	22	55	08	41	07	05
Being criticized by the ward nursing staff for a mistake which you have committed.	32	22	07	41	22	16

* omitted in interpretation

Table 6.1 (cont)
Varimax Factor Solution for 61 Stress Situations
Using Six Factors (n=181)

	Factors and Factor Loading (·100)					
	1	2	3	4	5	6
Factor 5 - Difficult Patient Situations						
Caring for a patient who speaks a language different from your own.	18	07	15	07	62	-04
Dealing with a patient who is sexually aggressive.	-19	17	18	18	61	15
Observing a painful procedure done to your patient.	47	31	-01	-06	55	-07
Caring for a patient who is critically ill.	21	26	16	-00	50	05
Caring for a dying patient.	08	18	04	04	50	24
Caring for a patient with an ethnic background different from your own.	34	-11	05	17	49	-00
Caring for a patient with a communicable disease.	09	10	17	36	43	-06
Doing a painful procedure to a patient.	37	46	00	-03	43	09
Factor 6 - Relationships with Non-Nursing Instructors						
Feeling intimidated by instructors who teach non-nursing courses.	21	07	02	22	04	70
Feeling in conflict with an instrtuctor who teaches a non-nursing course.	13	16	05	21	07	65
* Dealing with the institutional bureaucracy of your program.	17	26	21	-00	-28	43

* omitted in interpretation

Table 6.1 (cont)
Varimax Factor Solution for 61 Stress Situations Using Six Factors (n=181)

	Factors and Factor Loading (÷100)					
	1	2	3	4	5	6
Items which did not load at or above 0.40 on any factor						
Causing a medication or treatment error	26	-07	-01	37	25	08
Dealing with a patient who has tendencies toward homosexual behavior.	-04	-03	15	08	34	-11
Dealing with one's own health problems.	08	29	32	02	15	04
Doing a new procedure which a ward staff member has asked you to do.	32	35	22	17	16	-01
Feeling intimidated by doctors.	37	12	09	36	33	05
Receiving unclear instructions or expectations from an instructor regarding class presentations, papers or examinations.	26	38	31	25	19	18
Supporting a peer who has failed an examination or has been asked to leave the program.	36	07	-01	04	38	11
Talking with your instructor over one of your marked assignments.	38	18	20	32	10	19
Working with male patients.	24	19	06	39	-03	-34

regarding class presentations, papers or examinations, supporting a peer who has failed an examination or has been asked to leave the program, talking with your instructor about one of your marked assignments, and working with male patients.

There were seven items which loaded at 0.40 or greater on more than one factor. These items are listed below:

1. Doing a new procedure which your clinical instructor has requested you to do (Factors 1 and 2).

2. Having more class assignments than you feel you can manage (Factors 1 and 3).

3. Observing a painful procedure done to your patient (Factors 1 and 5).

4. Maintaining a rapport and cooperating with all peers (Factors 1 and 4).

5. Feeling unprepared for patient assignment (Factors 2 and 4).

6. Doing a painful procedure to a patient (Factors 2 and 5).

7. Feeling your instructor has set unrealistic expectations for your performance (Factors 2 and 4).

There were two items not used in the interpretation of two factors, although they each loaded only on one factor at 0.40 or greater. The two items are indicated by an asterisk (*) in Table 6.1. These items were: feeling too much responsibility in the clinical situation (located under Factor 4), and dealing with the institutional bureaucracy of your program (located under Factor 6). There were two main reasons why neither of these items were used in the interpretation of the appropriate factors. The first consideration was that these two items loaded at 0.41-0.43, while several other items within the same factor loaded at the 0.5-0.7 level. The other main reason was that the content of these items was much different then the theme of the items which loaded much higher on that particular factor. The essential characteristics of each factor will be described below.

Factor 1:

Expectations Regarding Standards of Student Academic and Clinical Performance

The ten items under Factor 1 dealt with the general area of expectations of student performance. The academic and clinical settings were both included in this factor. The expectations of student performance were set not only by the instructor, but generally by the program and the student. A shortened title of this factor, Expectations Regarding Performance, will appear from now on in this document.

Factor 2:

Student Conflict and Anxiety Regarding Expectations

This factor was made up of seven items related to the conflict and anxiety associated with the expectations of student performance. The conflict situations include interpersonal relationships, role overload, role ambiguity, and role conflict. These expectations again refer to program, instructor and student expectations of themselves. The title, Conflict and Anxiety, will appear when referring to this factor later in this document.

Factor 3:

Personal Demands

Factor 3 included ten items which directly related to the student's personal life. Some items were examples of role conflict and role overload as they related to being a student and a family member at the same time. Others specifically dealt with the home situation, financial and family matters.

Factor 4:

Student Relationships

There were eight items which were used for the interpretation of Factor 4. Each item was an example of a type of interpersonal relationship the student had which took place within the nursing program, either in nursing academic or clinical courses. These interpersonal relationships included those with peers, patients, ward nursing staff and nursing instructors. One item, feeling too much responsibility in the clinical situation, was not included in the interpretation of this factor because it did not obviously deal with student interpersonal relationships.

Factor 5:

Difficult Patient Situations

Six items were used to ascertain the meaning of this factor. Each item described a unique patient situation which required the student to adapt their usual methods of communication in order to care for the uniqueness of that particular patient.

Factor 6:

Relationships with Non-Nursing Instructors

There were three situations which met the stipulated criteria for this factor. Two items dealt exclusively with the relationship students have with non-nursing instructors; they each loaded at 0.7 and 0.65 respectively. The other item, dealing with the institutional bureaucracy of the program, was excluded from the interpretation of Factor 6. This was excluded because it did not clearly deal with the relationships students have with non-nursing instructors, and it loaded much lower (0.43) than the other two items.

Overall Stress Associated with Each Factor

The average amount of stress associated with each factor is displayed in Figure 6.1. It is interesting to note that as one moves from Factor 1 to Factor 6, the amount of stress associated with each decreases correspondingly. The amount of stress associated with each factor, except for Factor 6, falls between being mildly and moderately stressful. However, the average score for Factor 6 falls in the not stressful to mildly stressful range.

Comparing the Author's Categories with the Factor Analysis

The reader is reminded that in Chapter 3 the author identified potentially stressful situations based on several broad categories. Table 6.2 reveals the frequency of occurrence grouped according to factor analysis and the author's categories of potentially stressful situations identified in Chapter 3.

It is interesting to note how close the relationship was between the author's categories and specific factors regarding the questionnaire items. Of the 11 items which loaded under Factor 2, conflict and anxiety, four were identified to be examples of role conflict as described in Chapter 3. A similar situation occurred with Factor 4, student relationships, and the author's identified potentially stressful category of interpersonal relationships.

Seventy-five percent of the items which loaded under Factor 5, difficult patient situations, also fell under the author's category of clinical experience. There was also one example where nine of the eleven items which loaded on a particular factor (Factor 3, personal demands)were found to also be examples of two of the author's potentially stressful categories, namely role overload and personal situations.

Figure 6.1
Bar Graph Displaying Average Factor Scores
for the Total Population Between
the Degree of Stress and
the Six Factor Scores

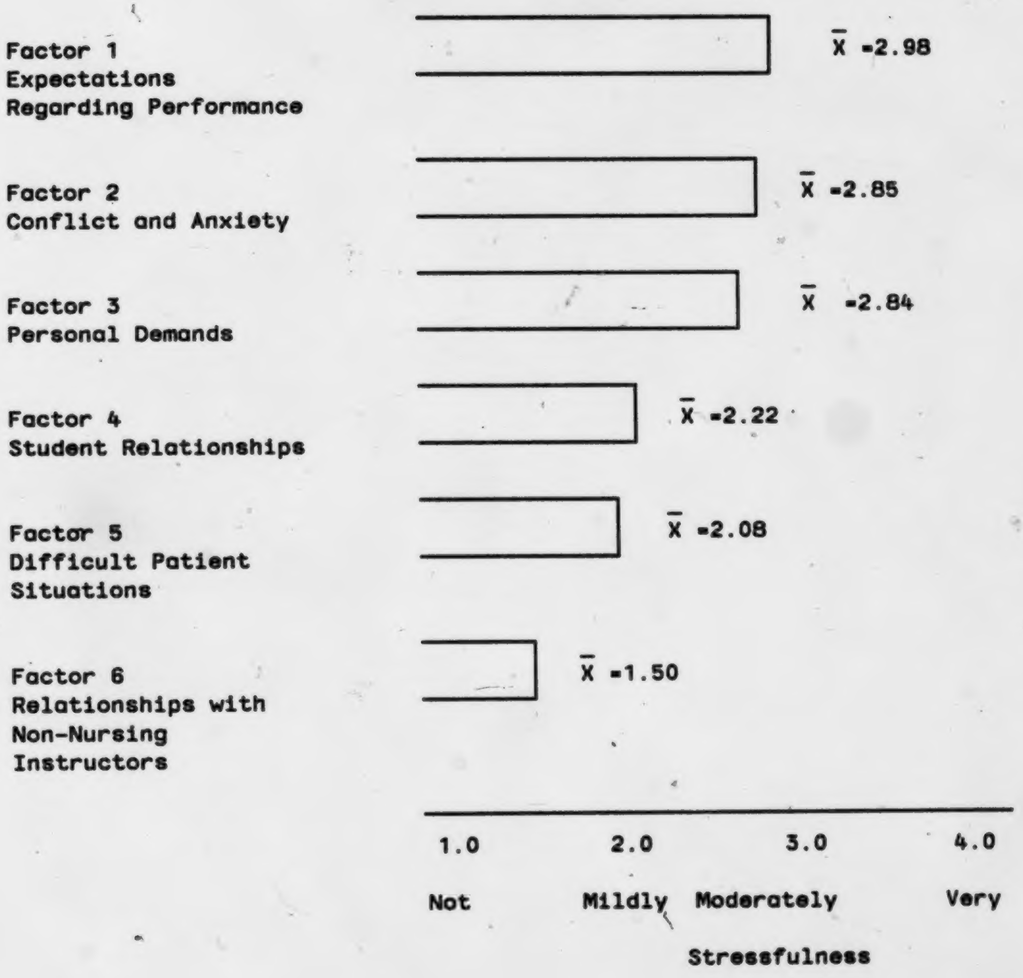


Table 6.2
Frequency of Occurrence of Questionnaire Items Grouped According to Factor Analysis and the Author's Categories of Potentially Stressful Situations (Identified in Chapter 3)

Potentially Stressful Categories	Factors 1 Expectations Regarding Performance	2 Conflict and Anxiety	3 Personal Demands	4 Student Relationships	5 Difficult Patient Situations	6 Relationship with Non-Nursing Instructors
Role Conflict	3	4	0	1	2	0
Role Overload	3	1	5	1	0	0
Role Insecurity	3	0	1	1	0	0
Evaluation	2	1	0	3	0	0
New Experiences	2	2	0	1	0	0
Inter-Personal Relationships	1	2	1	5	0	2
Institutional Factors	0	0	0	0	0	1
Clinical Experience	0	1	0	0	6	0
Personal Situations	0	0	4	0	0	0

Summary

The factor analysis of the 61 situational stress items included in the questionnaire has been presented in this chapter. The six factors identified were: expectations regarding performance, conflict and anxiety, personal demands, student relationships, difficult patient situations and relationships with non-nursing instructors.

It is important to note, that as one moves from Factor 1 to Factor 6, the amount of stress associated with each factor decreases correspondingly. Generally, the amount of stress associated with each factor was between being mildly to moderately stressful.

It is interesting to note the comparison between the categories identified in Chapter 3 and the factor analysis. Four examples where a close association between these two sources were described in the chapter.

CHAPTER 7

DATA ANALYSIS III: FURTHER ANALYSES

This chapter reports the further analyses completed regarding individual and structural characteristics. A step-wise regression analysis of the two measures of stress in terms of the six factors has also been included.

Individual Characteristics

Several individual characteristics were analyzed by using analysis of variance and t-tests. Characteristics which were found to reveal significant results included: gender, marital status, presence of dependents, as well as financial, faculty and family support.

Gender

The differences in the levels of stress perceived by male and female students are reported in Table 7.1. For two factors, conflict and anxiety and personal demands, the differences were statistically significant. Female students with a mean of 2.953 (2.0 meaning mildly stressful and 3.0 meaning moderately stressful) showed significantly

Table 7.1
Differences in Stress Experienced By
Male and Female Students on Six Stress Factors

		Gender				
		Group 1 male (n=12)		Group 2 female (n=173)		
	Factor	Mean	S.D.	Mean	S.D.	t-value
1.	Expectations Regarding Performance	2.666	0.948	3.069	0.807	-1.44
2.	Conflict and Anxiety	2.441	1.038	2.953	0.803	-1.68 *
3.	Personal Demands	1.733	1.137	2.668	0.977	-2.78 **
4.	Student Relationships	1.646	0.879	2.145	0.961	-1.89
5.	Difficult Patient Situations	1.500	0.704	1.919	0.912	-1.95
6.	Relationships with Non-Nursing Instructors	0.708	0.838	1.017	1.302	-1.18

** Difference Significant at the 0.01 level

* Difference Significant at the 0.05 level

more stress as assessed by the factor, conflict and anxiety, than their male counterparts with a mean of 2.441.

The second factor was significant beyond the 0.01 level of significance. The stress mean of the factor personal demands was found to be much higher for female students (2.668) than male students (1.733). This finding appears to be reasonable since it is often the female parent who carries a large portion of the responsibility of child care and homemaking.

Marital Status

The findings for a one way analysis of variance of stress perceived by nursing students classified by marital status on the six stress factors have been displayed in Table 7.2. A significant relationship was found to exist between two groups on two out of six factors. The stress mean of personal demands for the widowed and divorced group was 3.152, while the stress mean for the single group of students was 2.468 (2.0 meaning mildly stressful and 3.0 meaning moderately stressful).

Another factor, student relationships, also showed a significant correlation between two groups. In this case, the Scheffe test showed these groups to be single and married students. The stress mean for single students was 2.289, while the married group was 1.918 (2.0 meaning mildly stressful). It is interesting to note that the single student found the relationships which they had with peers, patients, ward

Table 7.2
One way Analysis of Variance Among Students Classified by Marital Status on Six Stress Factors

		Marital Status							
		Group 1 Single (n=103)		Group 2 Married (n=67)		Group 3 Widowed and Divorced (n=15)			
	Factor	Mean	S.D.	Mean	S.D.	Mean	S.D.	f-ratio	Significance Between Groups
1.	Expectations Regarding Performance	3.143	0.781	2.886	0.891	3.059	0.676	2.016	NS
2.	Conflict and Anxiety	2.969	0.859	2.864	0.823	2.840	0.611	0.401	NS
3.	Personal Demands	2.468	1.014	2.699	1.021	3.152	0.727	3.526	1-3 *
4.	Student Relationships	2.289	0.931	1.918	0.988	1.767	0.830	4.221	1-2 *
5.	Difficult Patient Situations	1.957	0.970	1.826	0.795	1.738	0.919	0.663	NS
6.	Relationships with Non-Nursing Instructors	1.044	1.193	1.873	1.374	1.233	1.425	0.638	NS

* Difference significant at the 0.01 level

NS No significant difference

nursing staff and nursing instructors to be of a greater source of stress for them than was the case for married students.

Presence of Dependents

The differences in stress experienced by students with and without dependents on six stress factors is presented in Table 7.3. Not surprisingly, the factor, personal demands, was found to be more stressful for those students with dependents (2.938) compared to those students .without dependents (2.435). The reader is reminded that a score of 2.0 corresponds to mildly stressful and 3.0 means moderately stressful. This difference was found to be significant at the 0.01 level.

Financial Support

Table 7.4 displays the differences in stress experienced by groups of nursing students according to degree of problem with adequate financial support on six stress factors. On four out of six factors, the two groups established -- those students experiencing no problem and those experiencing at least some problem -- were found to have significant differences. These four factors included: expectations regarding performance, conflict and anxiety, personal demands, and student relationships. Three of these differences were significant at the 0.01 level. The greatest difference was found on the factor, personal demands: students who indicated that financial support was no problem had a group mean of 1.868 whereas those who expressed that a

Table 7.3
Differences in Stress Experienced By
Students with and without Dependents on Six Stress Factors

		Presence of Dependents				
		Group 1 with dependents (n=63)		Group 2 with no dependents (n=121)		
	Factor	Mean	S.D.	Mean	S.D.	t-value
1.	Expectations Regarding Performance	2.893	0.853	3.121	0.798	-1.76
2.	Conflict and Anxiety	2.873	0.770	2.950	0.858	-0.61
3.	Personal Demands	2.938	0.9512	2.435	1.006	3.34 **
4.	Student Relationships	1.842	0.891	2.262	0.969	-2.94
5.	Difficult Patient Situations	1.790	0.849	1.953	0.930	-1.20
6.	Relationships with Non-Nursing Instructors	1.175	1.490	0.913	1.151	1.22

** Difference Significant at the 0.01 level

Table 7.4
Differences in Stress Experienced By Students According to Degree of Problem With Financial Support on Six Stress Factors

	Financial Support				
	Group 1 No Problem (n=48)		Group 2 A Minor to Serious Problem (n=135)		
Factor	Mean	S.D.	Mean	S.D.	t-value
1. Expectations regarding Performance	2.829	0.863	3.116	0.799	-2.09*
2. Conflict and Anxiety	2.623	0.750	3.031	0.825	-3.01**
3. Personal Demands	1.868	0.994	2.859	0.889	-6.43**
4. Student Relationships	1.780	0.989	2.231	0.926	-2.84**
5. Difficult Patient Situations	1.690	0.881	1.947	0.901	-1.71
6. Relationships with Non-Nursing Instructors	0.729	1.000	1.082	1.343	-1.66

** Difference significant at the 0.01 level

* Difference significant at the 0.05 level

problem existed had a group mean of 2.859. The reader is reminded that a stress mean of 2.0 means mildly stressful and 3.0 means moderately stressful.

Family Support

The differences in stress experienced by student groups characterized by the presence or absence of adequate family support on six stress factors is reported in Table 7.5. A significant difference was found between the two groups on two factors. These factors were conflict and anxiety and personal demands.

The students indicated a greater difference in stress between the two groups on the factor, personal demands ($p<0.01$) than on the factor, conflict and anxiety ($p<0.05$). The average stress for the group indicating no difficulty with family support was 2.304 on the personal demands factor, and 3.101 for the combined group indicating some degree of difficulty.

Faculty Support

The results of the analyses of two student groups, characterized by the presence and absence of adequate faculty support on six stress factors are reported in Table 7.6. On four of the six stress factors, significant differences ($p<0.01$) were found between the two groups of students. These four factors were: expectations regarding performance, conflict and anxiety, personal demands, and student relationships.

The students who reported that faculty support was a difficulty indicated stress means consistently higher than those students who reported that faculty support was not a problem. Both groups indicated that this area was mildly to moderately stressful for them.

Other Analyses

The six stress factors were analyzed using several other individual characteristics. Many of the analyses yielded no significance between any of the groups for any of the six factors. The individual characteristics so analyzed were: educational background, the number of dependents, the years of full-time employment prior to entering the program, and present employment status.

The individual characteristic, age, was analyzed using a one way analysis of variance with the students classified by their age on the six stress factors. There was one significant relationship found. The factor involved was the relationships with non-nursing instructors. The two groups involved were those students 20 to 24 years and those 30 to 34 years of age. The stress mean for the 20 to 24 year age group was 0.780, or in other words ranked as not stressful. The stress mean for the 30 to 34 year old group was 1.643 or between not stressful to mildly stressful.

Table 7.5
Differences in Stress Experienced By Two Students Groups Characterized by Adequate Family Support on Six Stress Factors

	Family Support				
	Group 1 Not a Problem (n=115)		Group 2 A Minor to Serious Problem (n=38)		
Factor	Mean	S.D.	Mean	S.D.	t-value
1. Expectations regarding Performance	2.958	0.827	3.177	0.798	-1.76
2. Conflict and Anxiety	2.804	0.781	3.103	0.874	-2.40*
3. Personal Demands	2.304	0.999	3.101	0.825	-5.58**
4. Student Relationships	2.072	0.942	2.166	0.997	-0.64
5. Difficult Patient Situations	1.917	0.888	1.826	0.920	-0.67
6. Relationships with Non-Nursing Instructors	0.909	1.186	1.109	1.393	-1.04

** Difference significant at the 0.01 level

* Difference significant at the 0.05 level

Table 7.6
Differences in Stress Experienced By Student Groups Characterized by Adequate Faculty Support on Six Stress Factors

	Factor	Faculty Support				
		Group 1 Not a Problem (n=98)		Group 2 A Minor to Serious Problem (n=85)		
		Mean	S.D.	Mean	S.D.	t-value
1.	Expectations regarding Performance	2.877	0.847	3.209	0.740	-2.80**
2.	Conflict and Anxiety	2.689	0.805	3.161	0.771	-4.04**
3.	Personal Demands	2.349	1.100	2.885	0.818	-3.70**
4.	Student Relationships	1.846	0.952	2.396	0.890	-4.02**
5.	Difficult Patient Situations	1.819	0.931	1.946	0.861	-0.95
6.	Relationships with Non-Nursing Instructors	0.821	1.136	1.135	1.359	-1.70

** Difference significant at the 0.01 level

Structural Characteristics:

College and Year of Program

Comparisons between College A and B as well as between the two years of the nursing program were carried out. Table 7.7 has displayed the stress experienced by nursing students who attended College A and those who attended College B, and the tests for differences between average scores on the six stress factors. Statistically significant differences in stress means were found between the two colleges on four out of the six factors. These four factors were identified to be: expectations regarding performance, conflict and anxiety, personal demands, and relationships with non-nursing instructors.

The respondents from College B were found to indicate a higher level of stress than the students from College A on each of the four factors. The reader is reminded that this finding supports the finding of Chapter 5 where the overall degree of stress was reported to be higher for College B students than for College A students.

A one way analysis of variance was completed showing relationships between program years and between colleges. The reader is again reminded that some doubt surrounds whether some of the first year students from College B identified themselves to be second year students due to a misunderstanding. Therefore, it would seem inappropriate to compare years within and between programs.

Table 7.7
Differences in Stress Experienced Between Nursing Students
Attending College A & College B.

	Factor	College				
		College A (n=88)		College B (n=96)		
		Mean	S.D.	Mean	S.D.	t-value
1.	Expectations regarding Performance	2.864	0.774	3.216	0.827	2.98**
2.	Conflict and Anxiety	2.586	0.764	3.228	0.768	5.68**
3.	Personal Demands	2.367	1.032	2.833	0.947	3.19**
4.	Student Relationships	2.100	0.962	2.1371	0.963	0.26
5.	Difficult Patient Situations	1.927	0.941	1.869	0.874	- 0.44
6.	Relationships with Non-Nursing Instructors	0.733	1.111	1.234	1.380	2.70**

** Difference significant at 0.01 level

* Difference significant at 0.05 level

NS No significant difference

Regression Analysis

The results of the multiple stepwise regression using the six stress factors and the two measures of overall stress are found in Table 7.8. In the questionnaire, there were two questions which tested for overall stressfulness. The two questions were: how stressful was it for you to adjust to becoming a student and what is the average amount of stress for you being a student.

The best predictor of overall stress for both measures of stress was Factor 1, expectations regarding performance. This single factor accounted for 31% of the variance for the question dealing with stressfulness associated with becoming a student, and 33% for the question dealing with the average amount of stress being a student.

The only other factor which was found to contribute significantly to the regression analysis was Factor 3, personal demands. Over 7% of the variance for the average amount of stress involved with being a student was accounted for by this factor. Factor 3 accounted for 1.5% of the variance in stressfulness associated with becoming a student. It is significant to note that over 40% of the variance in the overall amount of stress associated with being a student was accounted for by Factors 1 and 3. The other important point was that none of the other factors, conflict and anxiety, student relationships, difficult patient situations, and relationships with non-nursing instructors were found to contribute significantly to the stepwise regression analysis.

Table 7.8

Multiple Stepwise Regression Analysis with the Dependent Variables How Stressful Adjusting to Become a Student and the Average Stress Being a Student Using the Six Stress Factors

Independent Variables	R^2	Percentage Contribution	r
How Stressful Adjusting to Become a Student			
Factor 1 - Expectations Regarding Performance	0.310	31.0	0.561
Factor 3 - Personal Demands	0.325	1.5	0.420
		32.5%	
Average Stress Being A Student			
Factor 1 - Expectations Regarding Performance	0.334	33.4	0.578
Factor 3 - Personal Demands	0.405	7.1	0.553
		40.5%	

Summary

There were several important findings related to the individual characteristics of the respondents revealed by further analyses. These included:

1. Female students showed significantly more stress than their male counterparts on two factors: conflict and anxiety and personal demands.

2. Widowed and divorced students were found to be significantly more stressed on one factor -- personal demands -- than were single students.

3. Single students were more stressed on the factor, student relationships, than were married students.

4. Students with dependents were found to have a significantly higher level of stress compared to the students without dependents on the factor personal demands.

5. Four of the six factors revealed a significant difference between those students who found a problem with financial support and those who did not. The same was found with faculty support.

6. On two factors, a significant difference was found between the group of students who indicated that a difficulty existed with family support and students who did not.

There were two important findings regarding structural characteristics of the two programs studied which emerged from further analysis. One point was that on four out of six factors there were statistically significant differences in the stress means of the two colleges. The other important conclusion was that the respondents from College B were found to have a higher level of stress than the students from College A on the same four factors.

The regression analysis revealed some very important findings. Factor 1, expectations regarding performance, accounted for over 30% of the variance in the two variables dealing with overall stressfulness related to either becoming or being a student, and was the best predictor of overall stress for both variables. Factor 1 together with Factor 3, personal demands, accounted for over 40% of the variance in the overall amount of stress associated with being a student.

CHAPTER 8

RELATIONSHIP OF FINDINGS TO THE LITERATURE REVIEW

The major findings of this study will be reviewed in this chapter as they relate to the literature. These findings both supported and contradicted findings cited in the literature. Several examples were also found where the literature neither supported nor contested the results of the present study. An examination comparing the results from the literature to this study will be organized under the following headings: stressfulness, developmental versus situational stress, financial support, family and faculty support, expectations regarding performance, conflict and anxiety, personal demands, student relationships, difficult patient situations and college organizational characteristics.

Stressfulness

Overall

The results of this research have supported the general consensus of studies reported in the literature: the stress of nursing students was found to be considerable. Specifically, this study found that over

70% of respondents indicated the amount stress involved with being or becoming a student was at least moderate; 35% reported stress in the range between very to extremely stressful. Of the 61 stress-related situations, 56% (n=34) were reported to be in the mildly to moderately stressful range. The same range of stress was also found for five out of six factors.

The amount of stress associated with each factor decreases correspondingly as one moves from Factor 1 to Factor 6. The six factors have been listed in order of decreasing amount of stress: expectations regarding performance, conflict and anxiety, personal demands, student relationships, difficult patient situations and relationships with non-nursing instructors. The literature contains general support for each of these factors as being stressful for nursing students.

Factor 1, expectations regarding performance, was found to be the best predictor of stress for college nursing students. The regression analysis of the six factors, in relation to two overall stress measures, found that Factor 1 alone accounted for over 30% of the variance for the two variables dealing with the stress associated with being or becoming a student. Several researchers have supported the contention that expectations of student performance are a source of stress for nursing students (Fox et al., 1963; Sobol, 1978).

Feelings Related to Self

Jeglin-Mendez (1982) observed that the fear of "Will I make it" is a source of stress for many nursing students. Grassi-Russo (1981) has supported this. The present study also supported these findings. The situation "wondering if you will be able to complete your program" was found to be moderately to very stressful and was the fifth highest of all stressful situations.

This uncertainty was also identified in the open-ended question as an additional source of stress not tested in the questionnaire. Concerns were related to feeling insecure about becoming a nurse, fear of not succeeding and having to deal with family disappointment, as well as questioning whether nursing was a good career choice or not.

Developmental versus Situational Stress

Several writers contend that the student's stage of development -- the transition from adolescence to adulthood -- is a contributing source of stress. (Rosenberg and Fuller, 1955; Davis and Olesen, 1963). According to McKay (1978), nursing students are required to deal with concepts and exercise responsibility in situations incongruent with their age and maturity. Carter (1982) suggested that nursing student stress was more of a developmental crisis rather than a situational crisis. These writers assumed that nursing students were not mature or old enough to deal with the concepts and situations of their respective nursing programs.

Sobol (1978) contended that many students have had little or no opportunity to be responsible for another person's welfare before entering a nursing program. It is important to note here that over one-third of the respondents of this study indicated that they had at least one dependent. In this sense, a different kind of student was found in this study.

Nursing student stress can be better explained from the viewpoint of Jones (1978), namely that nursing students are placed in situations which are anxiety-producing and stressful. The present study has supported this contention. The following demographic data will serve to give the reader a profile of the nursing students involved in this study: 45% were between 20 to 24 years of age with nearly one quarter being 30 years or older, 69% have worked at least one year prior to commencement of their program and nearly 30% were employed at the time of this study. One could conclude that students involved in the present study were mature and probably not going through a developmental crisis. The reader is reminded that in the previous chapter age was not shown to be a significant variable related to college nursing student stress.

Financial, Family and Faculty Support

Financial Support

The area of finances has been reported in the literature to be generally stressful to all students (Mullinix et al., 1980). McCubbin and Patterson (1981) found that students who experienced financial problems were significantly more stressed than students who did not experience such difficulties. The findings of this study strongly support those in the literature. Seventy-five percent of the respondents indicated some difficulty with financial support. There was a significant difference found between those students who reported a problem with financial support and those who did not on four stress factors. These factors included: expectations regarding performance, conflict and anxiety, personal demands and student relationships. The open-ended question reiterated that this was a critical area of concern for students.

Family Support

The present study found that 62% of students indicated that no problem existed with family support. On two stress factors there were significant differences between the respondents who indicated some degree of difficulty with family support and those who did not. These factors were conflict and anxiety and personal demands. Respondents also mentioned this area of concern in the open-ended question. There was no reference found in the literature which would support the contention that the majority of nursing students have no problem with family support. However, Gunter (1969b) did report that 59% of nursing students surveyed were concerned either very frequently or fairly often about their home and family.

Faculty Support

A problematic relationship between a student and his/her nursing instructors has generally been reported to be stressful in the literature (Fox et al., 1963). Although 55% of the respondents in the present study indicated that faculty support was not a problem, 11% indicated that this area posed a moderate to serious problem for them. On four factors significant differences ($p<0.01$) were found between students who identified themselves as having a problem with faculty support and those who did not. The factors involved were: expectations regarding performance, conflict and anxiety, personal demands and student relationships. The presence or lack of faculty support was also reported as a source of stress in the open-ended question.

Expectations Regarding Performance

The most stressful group of situations fell under Factor 1, expectations regarding performance. Although this factor had the highest stress mean of all six factors, the overall stress mean was in the moderately stressful range. Both Sobol (1978) and the research team of Fox (1963) have supported this finding.

Clinical Versus Academics

Several researchers have reported that major sources of stress for nursing students are related to academic rather than clinical experiences (Gunter, 1969b; Hayes, 1966; Sobol, 1978; Garrett et al., 1976). The present study supports these findings to some extent; eighty percent of the five top ranked stressful items were related to academics.

Evaluation

Several writers have reported that evaluation, including clinical appraisals and written examinations, are a major source of anxiety or stress (Birch, 1979; Hayes, 1966; Jones, 1978; Kushnir, 1986; Mullinix et al., 1980; Selleck, 1982). The findings of the present study are consistent with these reports.

New Situations

In 1979, Birch reported that "ward changes" was a highly stressful situation for nursing students. In addition, Selleck (1982) found initial clinical experience to be anxiety-causing for students. Support for this contention was found in the present study; a similar situation, "rotating to new clinical areas or institutions," was found to be more than moderately stressful. Responses to the open-ended question included comments that rotations to different clinical areas was a source of stress for students.

Jones (1978) found a main sources of stress in the clinical situation to be when a student was asked to carry out a complicated task for the first time. Kushnir (1986) supported this by adding that novel situations are stressful for nursing students. The results of this study supported these earlier findings in the literature. Average stress scores for the situation "doing a new procedure which your clinical instructor has requested you to do" were in the moderately to very stressful range. A second situation, "doing a new procedure which a ward staff member has asked you to do," was found to be only mildly to moderately stressful. Although both situations deal with a new procedure, it seems that the intervening variable of a clinical instructor being present has affected the first situation. Apparently, it is more stressful to have a clinical instructor watch a new procedure then a ward nursing staff member.

Sobol (1978) suggested that it is stressful for nursing students to adjust to a new program. The present study found the stress associated with either being or adjusting to being a student similar: the average stress scores in both cases were in the the moderately stressful to very stressful range.

Impersonality and Unsatisfactory Patient Care

A specific situation pertaining to the impersonality of patient care or the neglect of a patient's emotional needs was not included in this questionnaire; neither was it mentioned by the students as an area which should have been included. Therefore, this present study did not address explicitly Stein's (1969) finding that 86% of nursing students in her sample were concerned about this aspect of patient care.

The situation "feeling that you give unsatisfactory care" was ranked as being moderately stressful by the respondents in this study. This finding would support Gunter (1969b) who found that 90% of her sample were concerned with their ability to give nursing care. Selleck (1982) also supported this finding.

Making Errors

Generally, researchers have reported that nursing students are afraid and anxious about making an error (Straus and Hutton, 1983; Griffith and Bakanaukas, 1983; Sobol, 1978; Stein, 1969; Gunter, 1969b). The finding of this study has added support to this contention. It is interesting to note that the situation in the present study "thinking about causing a medication or treatment error" had a stress mean higher than its counterpart "causing a medication or treatment error." These results would support the suggestion found in the literature that the stress associated with thinking about making an error is greater than the stress of actually causing one. Further support for this contention comes from the stress mean of the situation "being criticized by the ward nursing staff for a mistake which you have committed." The average score for this situation was between mildly to moderately stressful.

Conflict and Anxiety

Several researchers support the suggestion that students are often caught between conflicting authorities and demands on their time (Mauksch, 1965; Stein, 1969; Heinemann, 1964). Jones (1978) reported that in the clinical setting a main source of stress for nursing students was receiving instructions contrary to what had been taught. The present study has supported these findings in three ways:

1. The two situations "receiving contradictory instructions from different instructors" and "receiving contradictory instructions from

instructors and ward nursing staff" had means indicating a moderate amount of stress.

2. Factor 2, conflict and anxiety, included both of the above situations and five other stress situations. The overall mean of this factor also indicated a moderate amount of stress.

3. Additional sources of stress related to this area were pointed out in the open-ended question. The first was inconsistency of instructor expectations. An additional source of stress was when an instructor tended to prejudge an evaluation based on a previous negative performance appraisal. Another source of stress identified by some students was when their peers were unsafe in the clinical area and clinical instructors did not give these students extra assignments to enhance their skills.

Role Overload

In the literature, many authors have reported major sources of stress for nursing students to be related to work overload. Some mention multi-sensory input (Jeglin-Mendez, 1982),and others have mentioned the constant and overpowering pressure related to workload (Rosenberg and Fuller, 1955; Muff, 1982; Gunter, 1969b). The findings of the present study support the literature. The concept of role overload was tested in the questionnaire by situations as reported in Chapter 3. The stress scores of these situations indicate a moderate amount of stress for college nursing students. This was also an area identified by the respondents in the open-ended question.

Birch (1979) reported that "being shown up on the wards in front of patients and staff" caused the greatest amount of stress for the nursing student. Although this event was not tested as such in the present questionnaire, certain situations which were tested offer indirect support for this contention. These situations included: "doing a new procedure which your clinical instructor has requested you to do," "feeling unprepared for patient assignment" and "receiving contradictory instructions from instructors and nursing staff." These situations were all reported as moderately stressful.

Personal Demands

Stress Related to Role Conflict

This study found that women experience more stress than their male counterparts in situations causing conflict and anxiety and in situations which present personal demands. However, this finding should be received with caution in view of the fact that 93.5% (n=173) of the sample was female. Although the literature addresses the frustrations and conflicts resulting from a woman's dual role as mother and worker (Sund and Ostwald, 1985), the literature is not clear whether women should be more stressed then men concerning personal demands or situations causing conflict and anxiety.

Family Relations

"Feeling in conflict with your family or those people significant to you" was ranked by the respondents in this study as being moderately stressful. This would support other sources (Mancini et al, 1983; Wallace, 1978) which have identified family relationships as being a major source of stress.

Concern Regarding Health of Self and Family

The results of this study showed that "dealing with one's own health problems" is mildly stressful on the average. It is difficult to tell if Gunter's results supported these present findings since she found that 64% of students surveyed were seldom or practically never concerned about their own health (1969b).

"Dealing with family illness" was ranked as being between mildly to moderately stressful by the respondents. Other related sources of stress were identified in the open-ended question of the questionnaire; these areas included the illness and stress of the respondent's children as well as the death of a family member. These findings would generally support those found by Gunter (1969b).

Student Relationships

Although interpersonal relationship conflicts may not be destructive, they may be stressful (Muff, 1982). Bailey (1980) found interpersonal relationships to be the leading source of stress for intensive care nurses in the United States.

Relating to Instructors

The findings from this study support those of another study (Fox et al., 1963) where nursing students found their relationship with clinical instructors was moderately stressful. The one-way analysis of variance showed that students who experienced problems with faculty support (less than 50%) were significantly more stressed than the students who did not experience such difficulty. It is important to note that situations which dealt with the relationship students had with non-nursing instructors were identified to be not stressful to mildly stressful and the least stressful of the six factors.

Relating to Physicians

Muff (1984) described the physician-nurse relationship as a major source of conflict. This study does not strongly support this finding since the situation of "feeling intimidated by doctors" was only reported to be mildly to moderately stressful.

Relating to Peers

Mausch (1965) reported that a failure of a fellow student was stressful to the rest of the nursing class. Generally, the present study would support this contention since the situation "supporting a peer who has failed an examination or has been asked to leave the program" was identified as being a mild to moderate source of stress.

Relating to Ward Staff

Selleck (1982) found interpersonal relationships with staff to be stressful for nursing students. Responses from the open-ended question offer support for this finding. Students commented that an additional source of stress was when ward nursing staff ridiculed the students.

Difficult Patient Situations

Concern Regarding Pain and Death

One situation identified by Birch (1979) to be stressful for nursing students was "care of the terminally ill." A similar situation in the present study "caring for a dying patient" was ranked as being mildly stressful.

Gunter (1969b) found that more than half of her sample were either seldom or practically never concerned about carrying out a painful procedure on a patient. Birch (1979) also reported that "nursing patients in great pain" was the second greatest cause of anxiety at both 8 and 24 months of training. This present study supports the results of Birch's study. The comparable situations described in the questionnaire were "doing a painful procedure to a patient" and "observing a painful procedure done to your patient." The stress means of these two situations were found to be closer to moderately stressful than mildly stressful.

Sexual Identity Related to Patient Care

In 1955, Rosenberg and Fuller found that a source of stress for nursing students was difficulties with sexual identity related to the profession. The present study does not support this finding. The situations which dealt with caring for female and male patients or patients with tendencies towards homosexual behavior had stress scores indicating no stress to mild stress. However, this study would support the finding of Parkes (1982) where student stress was higher caring for male compared to female patients, although in both cases the average stress scores were very low.

College Organizational Characteristics

There were two statements from the open-ended question which pointed out additional areas of stress for college nursing students which result from college rules and regulations. One area pertained to the difficulty and frustration involved with not receiving credit for past experience and/or courses. The second area identified the difficulty of students transferring into their present program from other nursing programs. The literature did not specifically cite either of these areas as sources of stress for nursing students.

Summary

This chapter has reviewed the relationship between the literature and the findings of this study. This study was found to support and, and in a few instances, oppose previous findings reported in the literature. There were also findings in this study which have not been previously reported in the literature.

Overall, the contention that the stress of nursing students is considerable was supported by the findings of this study. Factor 1, expectations regarding performance, was found to be the best predictor of overall student stress; this finding was supported by the literature. Generally, there was support from the literature for the findings of this study.

There was one area where the results of the present study contradicted many of those found in the literature. The area involved was related to whether student stress was due to a stage of development or in fact was due to the situation. The students in the present study were generally more mature and older than were found previously cited in the literature. Therefore, the results of this study were found to support the contention that nursing student stress is related more to the situation then to the developmental stage of the student.

CHAPTER 9

REVIEW OF THE FINDINGS, IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

This final chapter not only summarizes the principal findings of this study, it also provides some thoughts and questions for further research. The first two sections of this chapter review the findings and explore their implications. The final section suggests some recommendations for future research.

Review of Findings

This section will systematically review each of the research questions presented in Chapter 1.

Research Question 1

To what extent do college nursing students at two Alberta colleges experience stress?

Overall, respondents indicated that they found being a student to be closer to being moderately stressful than to being very stressful.

Subquestion 1.1

How frequently has each situation occurred?

The frequency of occurrence of each potentially stressful situation, as well as the stress means, were reported in Chapter 5. These situations ranged from occurring nearly every day to never occurring. The top ten most frequently occurring situations occurred from one to two times per month to almost every day. The five least frequently occurring situations occurred from one to two times per year to having never occurred.

Subquestion 1.2

How stressful have students perceived each situation when it has occurred?

The rank order of the 61 potentially stressful situations according to the amount of stress was displayed in Chapter 5. The most stressful situation, writing an exam, was found to be closer to being very stressful than being a moderate source of stress. Fourteen situations were found to be moderately to very stressful. The majority of situations (n=33), however, were in the range mildly to moderately stressful. Twelve situations either had not occurred in the experience of the students or were not stressful.

Subquestion 1.3

What is the rank order of each situation from the most stressful to the least stressful?

Each situation has been rank-ordered according to the the amount of stress perceived by the student. This information is presented in tabular form in Chapter 5. The situations which related to expectations regarding student performance were found to be the most stressful and situations regarding relationships with non-nursing instructors were found to cause the least amount of stress for college nursing students.

Subquestion 1.4

What relationship exists between the frequency of the occurrence of each situation and the students' perceptions of the stress associated with these situations?

A positive relationship was found between frequency and stressfulness. This relationship was significant at the 0.05 level and was graphically displayed in Chapter 5.

The correlations between frequency and stressfulness according to college and year of program are presented in Chapter 5. The frequency and intensity of the stress situations are directly related beyond the 0.01 level of significance for first year students from both colleges.

Subquestion 1.5

What areas of stress can be identified from a factor analysis of student perceptions of stress associated with each specific situation?

Factor solutions from six to ten were analyzed and the six-factor solution seemed to be the most useful. The six factors were identified to be: expectations regarding performance, conflict and anxiety regarding expectations, personal demands, student relationships, difficult patient situations, and relationships with non-nursing instructors. The average stress associated with each successive factor decreases. That is to say, Factor 1 (expectations regarding performance) was the most stressful; Factor 6 (relationships with non-nursing instructors), the least stressful.

Subquestion 1.6

What situations are identified by students to be very or extremely stressful?

There were no situations which had a stress mean of 4.0 (very stressful) or above. The highest stress mean was 3.78 (3.0 meaning moderately stressful); this was reported for the situation "writing an exam."

Research Question 2

To what extent are the identified student stressors related to selected associated factors?

Subquestion 2.1

Which of the factor scores are best correlated with student perceptions of overall stress?

The regression analysis has made it very clear which factor scores account for most of the stressfulness. Factor 1, expectations regarding performance, accounted for 33.4% of the variance for the average stress associated with being a student. Factor 3, personal demands, accounted for another 7.1 %. The other factors were not found to contribute significantly to the variance.

The multiple step-wise regression of the variable pertaining to adjustment to becoming a student yielded similar results. These data are presented in Chapter 7.

Subquestion 2.2 and 2.2.1

To what extent are differences in student perceptions of overall stress associated with individual characteristics: age, gender, educational background, marital status, presence and number of dependents, financial situation, and adequacy of faculty and family support?

Gender. Male students were significantly less stressed then their female counterparts on two factors. These factors included situations relating to personal demands and those relating to conflict and anxiety regarding expectations.

Marital Status. Students who were widowed or divorced were significantly more stressed then their single peers in situations relating to personal demands. However, single students were significantly more stressed than either widowed and divorced students in situations relating to student relationships.

Presence of Dependents. Nursing students with dependents were found to be more stressed then a student without dependents for the factor, personal demands.

Financial Support. Students who indicated some difficulty with financial support, be it anything from a minor problem to a serious problem, were found to be significantly more stressed, on four out of six factors. These factors were: expectations regarding performance, conflict and anxiety, personal demands, and student relationships.

Family Support. Those students who indicated that family support posed a problem for them were found to nave significantly more stress on two factors than the students who indicated that family support posed no difficulty for them. These two factors were conflict and anxiety and personal demands.

Faculty Support. Students who felt that some difficulty existed with faculty support were found to have significantly ($p<0.01$) more stress on four factors than their counterparts who indicated no difficulties. The factors involved were: expectations regarding performance, conflict and anxiety, personal demands, and student relationships.

Other Analyses. Several other individual characteristics were also analyzed for their effect on the six stress factors but none yielded significant results. These characteristics included: educational background, the number of dependents, the years of full-time employment prior to entering the program, and present employment status.

Subquestion 2.2 and 2.2.2

To what extent are the differences in student perceptions of overall stress associated with structural characteristics: college, year of program?

The differences in the stress experienced by the nursing students of Colleges A and B were compared. There were four factors which were found to be significantly more stressful for the students from College B than College A students. These factors were: expectations regarding performance, conflict and anxiety, personal demands, and relationships with non-nursing instructors. Due to the possible misunderstanding which occurred with first and second year students from College B, it was inappropriate to report differences between years of programs.

Subquestion 2.2 and 2.2.3

To what extent are differences in student perceptions of overall stress associated with educational characteristics: clinical situation, nursing and non-nursing courses?

In order to calculate which section of the program (clinical, nursing or non-nursing courses) the students found to be the most stressful, each situation in the questionnaire was assessed as to whether it most related to the clinical setting, nursing courses or non-nursing courses. Situations which were found to be appropriate for more than one category were eliminated from the process. The following situations were included under each category:

1. Clinical setting - 1, 2, 3, 4, 5, 8, 9, 12, 15,
23, 24, 25, 27, 28, 34, 39,
41, 43, 44, 49, 51, 52, 53,
55, 57, 58, 59, 60, 61

2. Nursing courses - 54

3. Non-Nursing courses - 11, 19

The number of situations which dealt with the clinical setting greatly outnumbered the situations which dealt specifically with either nursing or non-nursing courses. Moreover, the situations related to the clinical setting were reported to be more stressful for college nursing students than either nursing or non-nursing courses.

Implications

1. The data gathered in this study have indicated that college nursing students find the average stress associated with being a student to be in the range moderately to very stressful. Although the literature has pointed this finding out over the past many years, it appears that the problem of nursing student stress has not been relieved. Administrators, educators and students first of all need to be aware that this is still an ongoing problem. Educators and administrators can work to alleviate stress which adversely affects learning. Students need to be more assertive in calling attention to stressful situations which are detrimental to their learning.

Both students and faculty could benefit from stress counselling sessions. Faculty could learn more about where and when to refer students who are having difficulty coping with stress. They could also gain greater awareness of aspects of their program which are major sources of stress for students and which could perhaps be changed without sacrificing program quality. Students could learn how to relax and study more effectively, how to write better examinations, how to relate more effectively with their instructors and, in general, how to deal with their greatest sources of stress.

2. This study indicated that the situations which were included in Factor 1, expectations of student performance, were the most stressful; the average amount of stress was found to be moderate. This is an important finding because (1) the amount of overall stress of nursing students was found to be in the moderate to very stressful range and, (2) of all the situations tested, the ones in Factor 1 were found to be the most stressful. These findings have important implications for the educator, the student and the administrator. First of all, it is important that all three parties are aware that expectations regarding student performance are stressful for students. Instructors and students should work towards clarifying expectations as much as possible. Although administrators of nursing programs must maintain the quality of their programs, they could try to minimize the number of student rotations to new institutions or clinical areas.

3. In order to meet the future demands for nursing personnel, administrators and educators will have to find new ways to adapt their programs to those students who have special needs. Two specific groups of students who indicated a higher level of stress than their counterparts were the students who are divorced and widowed as well as those

with dependents. Nursing programs will have to become more flexible to accommodate students with major sources of stress related to situations outside of their respective programs. Perhaps challenge exams, correspondence electives, and flexible academic workloads could be incorporated without too much difficulty into the present programs. Ready access to day-care services would ease the stress experienced by students with dependents.

Nursing students who may be subject to non-program sources of stress have implications for admission committees. During the initial interview, are these students appropriately forewarned of the heavy load they are considering taking on? A mandatory session with a college counsellor for these students before admission could be worth considering.

Recommendations for Further Study

1. It would be important to undertake this study with nursing students from other colleges, both within and outside of Alberta. This study should also be done with nursing students from hospital based programs as well as those from university basic baccalaureate programs.

2. Several potential sources of stress were suggested by the respondents and some are listed below. The difficulty with some of the suggested areas is that many of these potential sources of stress would not be experienced by all students. Areas which could be considered for future testing in the questionnaire include the following: (1) repetitious or useless assignments, (2) nursing students ridiculed by

ward nursing staff, (3) unsafe students in the clinical setting, (4) students not given credit for their past knowledge or experience , (5) difficulty transferring between programs, (6) death of a family member, especially a child, (7) family not emotionally supportive of the student, (8) living arrangements, (9) pregnancy of a student, (10) moving of a student or a student's family, and (11) wondering if nursing is the right career choice or not.

3. There are several suggestions which could improve the methodology for future use of this questionnaire. They include the following:

(1). If one chooses to meet personally with the students to distribute and collect questionnaires, it is in the best interest of the study to try and arrange to have the questionnaires completed at a time when as many students as possible would be available to participate.

(2). All staff involved in any way with the conduct of the study should be aware of your objectives and feel some ownership in the successful completion of the study.

(3). Consider combining the overall stress associated with being a student and becoming a student, since both yielded similar results.

(4). Delete the duplicate question, "Feeling in conflict with ward nursing staff."

(5). Identify questionnaires in such a way that the year and place of the program could be identified from the cover sheet and anonymity could be guaranteed for the individual respondent. This process could be invaluable since an accurate knowledge of which group answered the questionnaire is of utmost importance. If this suggestion is followed, the two demographic questions which asked the year and place of the program could be eliminated from the questionnaire.

4. Specifically ask which area is most stressful for students: the clinical setting, nursing courses, or non-nursing courses.

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Appendix A:

The Student Nurses' Perception of Stress Questionnaire with Cover Letter

June 1986

Dear College Nursing Student:

I am a nurse and a graduate student at the University of Alberta. Presently, I am in the process of completing my Master's thesis in Education Administration. My study deals with stress and the college nursing student.

To determine what is stressful for college nursing students, I have prepared a questionnaire to be completed by the students of two Alberta basic college nursing programs. The colleges chosen were College A and College B. This study has been approved by the nursing administration of your college.

This study should take you approximately 20 minutes to complete. When finished, please return the completed questionnaire (without your name on it) in the attached envelope to myself.

Although it is important to have as many students as possible answer these questionnaires, this is a voluntary exercise. If you do not wish to participate in this study, please return the unanswered questionnaire to me.

I would like to thank you for your time and attention to this important matter.

Sincerely,

Elizabeth E. Rollheiser

THE STUDENT NURSES' PERCEPTION OF STRESS QUESTIONNAIRE

PART 1: SOURCES OF STRESS

Stress will be defined as the experience of a whole range and mixture of unpleasant sensations: predominantly tension, anxiety, depression, frustration, and a feeling of being emotionally drained resulting from pressures or over-burdening demands.

Different people find different things to be stressful. Below are listed several situations which may cause stress for the college student nurse.

Each situation requires two answers. Please indicated by circling the appropriate number:

1. In Column A how frequently the situation has occurred to you since you began the program using the following scale of (1)-(5).

   (1)Never
   (2)1-2 times/year
   (3)1-2 times/month
   (4)1-2 times/week
   (5)Almost every day

2. In Column B how stressful you feel that particular situation is for you when it occurs using the following scale of (0)-(5).

   (0)Not Occurred
   (1)Not Stressful
   (2)Mildly Stressful
   (3)Moderately Stressful
   (4)Very Stressful
   (5)Extremely Stressful

Column A		SITUATIONS	Column B	Office Use
How often has this situation occurred for *you*?			How stressful has this situation been for *you*?	1 1-4
1 2 3 4 5	1.	Being given a final grade in the clinical area.	0 1 2 3 4 5	5,6
1 2 3 4 5	2.	Causing a medication or treatment error.	0 1 2 3 4 5	7,8
1 2 3 4 5	3.	Working with male patients.	0 1 2 3 4 5	9,10
1 2 3 4 5	4.	Feeling in conflict with ward nursing staff.	0 1 2 3 4 5	11,12

Column A		SITUATIONS	Column B	
How often has this situation occurred for you?			How stressful has this situation been for you?	
(1) Never (2) 1-3 times (3) 4-10 times (4) more than 10 times (5) Regularly			(0) Not Occurred (1) Not Stressful (2) Mildly Stressful (3) Moderately Stressful (4) Very Stressful (5) Extremely Stressful	Office Use
1 2 3 4 5	5.	Failing to locate you clinical instructor when you feel that you need her in the clinical area.	0 1 2 3 4 5	13,14
1 2 3 4 5	6.	Receiving contradictory instructions from different instructors.	0 1 2 3 4 5	15,16
1 2 3 4 5	7.	Completing reports and papers by a set deadline.	0 1 2 3 4 5	17,18
1 2 3 4 5	8.	Feeling too much responsibility in the clinical situation.	0 1 2 3 4 5	19,20
1 2 3 4 5	9.	Caring for a dying patient.	0 1 2 3 4 5	21,22
1 2 3 4 5	10.	Dealing with one's own health problems.	0 1 2 3 4 5	23,24
1 2 3 4 5	11.	Feeling intimidated by instructors who teach non-nursing courses.	0 1 2 3 4 5	25,26
1 2 3 4 5	12.	Feeling unprepared for patient assignment.	0 1 2 3 4 5	27,28
1 2 3 4 5	13.	Dealing with family illness.	0 1 2 3 4 5	29,30
1 2 3 4 5	14.	Being unsure of the financial support needed to continue one's studies and maintain one's family.	0 1 2 3 4 5	31,32
1 2 3 4 5	15.	Doing a painful procedure to a patient.	0 1 2 3 4 5	33,34
1 2 3 4 5	16.	Feeling in conflict with peers.	0 1 2 3 4 5	35,36
1 2 3 4 5	17.	Maintaining a good rapport with instructors.	0 1 2 3 4 5	37,38

Column A		SITUATIONS	Column B	
How often has this situation occurred for you? (1) Never (2) 1-3 times (3) 4-10 times (4) more than 10 times (5) Regularly			How stressful has this situation been for you? (0) Not Occurred (1) Not Stressful (2) Mildly Stressful (3) Moderately Stressful (4) Very Stressful (5) Extremely Stressful	Office Use
1 2 3 4 5	18.	Feeling that your social life is restricted due to heavy school assignments.	0 1 2 3 4 5	39,40
1 2 3 4 5	19.	Feeling in conflict with an instructor who teaches a non-nursing course.	0 1 2 3 4 5	41,42
1 2 3 4 5	20.	Dealing with an unhappy home situation.	0 1 2 3 4 5	43,44
1 2 3 4 5	21.	Taking an oral exam.	0 1 2 3 4 5	45,46
1 2 3 4 5	22.	Commuting to school.	0 1 2 3 4 5	47,48
1 2 3 4 5	23.	Dealing with a patient who has tendencies toward homosexual behavior.	0 1 2 3 4 5	49,50
1 2 3 4 5	24.	Feeling that you give unsatisfactory nursing care.	0 1 2 3 4 5	51,52
1 2 3 4 5	25.	Doing a new procedure which your clinical instructor has requested you to do.	0 1 2 3 4 5	53,54
1 2 3 4 5	26.	Feeling your instructor has set unrealistic expectations for your performance.	0 1 2 3 4 5	55,56
1 2 3 4 5	27.	Feeling in conflict with ward nursing staff.	0 1 2 3 4 5	57,58
1 2 3 4 5	28.	Caring for a patient with a communicable disease.	0 1 2 3 4 5	59,60
1 2 3 4 5	29.	Writing an exam.	0 1 2 3 4 5	61,62

Column A

How often
has this situation
occurred for you?

(1) Never
(2) 1-3 times
(3) 4-10 times
(4) more than 10 times
(5) Regularly

SITUATIONS

Column B

How stressful
has this situation
been for you?

(0) Not Occurred
(1) Not Stressful
(2) Mildly Stressful
(3) Moderately Stressful
(4) Very Stressful
(5) Extremely Stressful

Column A		SITUATIONS	Column B	Office Use
1 2 3 4 5	30.	Dealing with others who make you feel that you do not know what you are doing.	0 1 2 3 4 5	63,64
1 2 3 4 5	31.	Failure to receive adequate instructor feedback regarding your performance.	0 1 2 3 4 5	65,66
1 2 3 4 5	32.	Wondering if you will be able to complete your program.	0 1 2 3 4 5	67,68
1 2 3 4 5	33.	Resolving time demands of school with time demands of personal life.	0 1 2 3 4 5	69,70
1 2 3 4 5	34.	Thinking about causing a medication or treatment error.	0 1 2 3 4 5	71,72
1 2 3 4 5	35.	Feeling yourself in conflict with a nursing instructor.	0 1 2 3 4 5	73,74
1 2 3 4 5	36.	Talking with your instructor over one of your marked assignments.	0 1 2 3 4 5	75,76
1 2 3 4 5	37.	Juggling extracurricular activities and your school work.	0 1 2 3 4 5	77,78

Column A	SITUATIONS	Column B	Office Use
How often has this situation occurred for *you*?		How stressful has this situation been for *you*?	2 1-4
(1) Never (2) 1-3 times (3) 4-10 times (4) more than 10 times (5) Regularly		(0) Not Occurred (1) Not Stressful (2) Mildly Stressful (3) Moderately Stressful (4) Very Stressful (5) Extremely Stressful	
1 2 3 4 5	38. Feeling insecure about your role in marriage or with others significant to you.	0 1 2 3 4 5	5,6
1 2 3 4 5	39. Working with female patients.	0 1 2 3 4 5	7,8
1 2 3 4 5	40. Receiving unclear instructions or expectations from an instructor regarding class presentations, papers or examinations.	0 1 2 3 4 5	9.10
1 2 3 4 5	41. Caring for a patient who speaks a language different from your own.	0 1 2 3 4 5	11,12
1 2 3 4 5	42. Having more class assignments than you feel you can manage.	0 1 2 3 4 5	13,14
1 2 3 4 5	43. Having too much work to do in too little time in the clinical area.	0 1 2 3 4 5	15,16
1 2 3 4 5	44. Doing a new procedure which a ward staff member has asked you to do.	0 1 2 3 4 5	17,18
1 2 3 4 5	45. Supporting a peer who has failed an examination or has been asked to leave the program.	0 1 2 3 4 5	19,20
1 2 3 4 5	46. Dealing with the institutional beuracracy of your program.	0 1 2 3 4 5	21,22
1 2 3 4 5	47. Maintaining a rapport and cooperating with all peers.	0 1 2 3 4 5	23,24
1 2 3 4 5	48. Having too many home responsibilities.	0 1 2 3 4 5	25,26

Column A		SITUATIONS	Column B	
How often has this situation occurred for you?			How stressful has this situation been for you?	
(1) Never (2) 1-3 times (3) 4-10 times (4) more than 10 times (5) Regularly			(0) Not Occurred (1) Not Stressful (2) Mildly Stressful (3) Moderately Stressful (4) Very Stressful (5) Extremely Stressful	Office Use
1 2 3 4 5	49.	Observing a painful procedure done to your patient.	0 1 2 3 4 5	27,28
1 2 3 4 5	50.	Feeling yourself in conflict with your family or those people significant to you.	0 1 2 3 4 5	29,30
1 2 3 4 5	51.	Caring for a patient who is critically ill.	0 1 2 3 4 5	31,32
1 2 3 4 5	52.	Being criticized by the ward nursing staff for a mistake which you have committed.	0 1 2 3 4 5	33,34
1 2 3 4 5	53.	Knowing your instructor expects 'professional' behavior in the clinical setting.	0 1 2 3 4 5	35,36
1 2 3 4 5	54.	Discovering your final grades in nursing courses.	0 1 2 3 4 5	37,38
1 2 3 4 5	55.	Developing clinical skills to an acceptable level of performance.	0 1 2 3 4 5	39,40
1 2 3 4 5	56.	Feeling intimidated by nursing instructors.	0 1 2 3 4 5	41,42
1 2 3 4 5	57.	Rotating to new clinical areas or institutions.	0 1 2 3 4 5	43,44
1 2 3 4 5	58.	Caring for a patient with an ethnic background different from your own.	0 1 2 3 4 5	45,46
1 2 3 4 5	59.	Dealing with a patient who is sexually aggressive.	0 1 2 3 4 5	47,48

Column A	SITUATIONS	Column B	
How often has this situation occurred for you?		How stressful has this situation been for you?	
		(0) Not Occurred	
(1) Never		(1) Not Stressful	
(2) 1-3 times		(2) Mildly Stressful	
(3) 4-10 times		(3) Moderately Stressful	
(4) more than 10 times		(4) Very Stressful	
(5) Regularly		(5) Extremely Stressful	
			Office Use
1 2 3 4 5	60. Receiving contradictory instructions from instructors and ward nursing staff.	0 1 2 3 4 5	49,50
1 2 3 4 5	61. Feeling intimidated by doctors.	0 1 2 3 4 5	51,52

PART 2: PERSONAL DATA

Office Use

This information is required to make comparisons between groups. Please answer the following questions as they pertain to yourself at present. Please respond to all items by circling the best response.

1. Years of age: 53

    1. less than 20
    2. 20-24
    3. 25-29
    4. 30-34
    5. 35-39
    6. 40 or older

2. Sex: 54

    1. male
    2. female

3. Educational background: 55

    1. not completed grade 12
    2. completed grade 12
    3. completed a diploma in a college, trade or technical school
    4. completed a university degree
    5. other ____________________

4. Marital status: 56

    1. single
    2. married
    3. widowed or widower
    4. divorced or separated

5. Please indicate if you have any dependents: 57

    1. yes
    2. no

    If yes, please indicate how many: 58

    1
    2
    3
    4
    5 or more

Office Use

6. Please identify the college which you are presently enrolled in a basic nursing program: 59

   1. College B
   2. College A

7. Please indicate the number of years you have held full time employment outside of the home before entering this program: 60

   1. 0 years
   2. 1 year
   3. 2-5 years
   4. 6-10 years
   5. greater than 10 years

8. Please indicate below what your present employment status is: 61

   1. not employed
   2. employed part time (less than 10 hours per week)
   3. employed part time (between 10-25 hours per week)
   4. employed part time (more than 25 hours per week)
   5. employed full time

9. On the average, what is the number of students per clinical instructor? Please write the number on the line below. ______ 62

10. The year of your program: 63

   ( ) first
   ( ) second

11. To what degree have the following areas been a problem for you? Please circle the appropriate number.

   a. financial 64

1	2	3	4
	not a problem		a serious problem

   b. support and encouragement of family or others significant to you. 65

1	2	3	4
	not a problem		a serious problem

Office Use

c. faculty support and encouragement

66

1 2 3 4

not a problem

a serious problem

PART 3: GENERAL DATA	Office Use
1. On the average, how stressful is it for you to be a student in your nursing program? 1. Not Stressful 2. Mildly Stressful 3. Moderately Stressful 4. Very Stressful 5. Extremely Stressful	67
2. How stressful was it for you to adjust to the process of becoming a student nurse? 1. Not Stressful 2. Mildly Stressful 3. Moderately Stressful 4. Very Stressful 5. Extremely Stressful	68
3. Please elaborate if you feel that there are major sources of stress for you which have not been included in this questionnaire.	

Thank you for your time and attention.

Appendix B:

Correspondence

(Mrs.) Elizabeth E. Rollheiser
14105-47 Ave.
Edmonton, Alberta
Canada T6H-0B8

Fall 1986

Nursing Program Administrator
of College A and B;

Several weeks have now passed since we have spoken to each other. Since that time I have completed my data collection. I would like to sincerely thank yourself and your staff for cooperation and help with this research.

One loose end still remains however. I require as soon as possible the total number of nursing students in first year and in second year as of June 1986. I would like to thank you again for your continued cooperation in this matter.

Sincerely,

Elizabeth E. Rollheiser

(Mrs.) Elizabeth E. Rollheiser
14105-47 Ave.
Edmonton, Alberta
Canada T6H-0B8

January 15, 1987

Plenum Press
233 Spring Street
New York, New York
USA 10013

To whom it may concern;

I would like to gain permission to include in my thesis the diagram which is found on page 15 of Life After Stress by Martin Shaffer published by your company in 1982. The title of the diagram is called, "The Sequence of Events in the General Adaptation Syndrome (GAS)".

I am eagerly looking forward to further correspondence with you as soon as possible regarding this matter.

Thank you.

Yours very truly,

Elizabeth E. Rollheiser

(Mrs.) Elizabeth E. Rollheiser
14105-47 Ave.
Edmonton, Alberta
Canada T6H-0B8

January 15, 1987

The Van Nostrand Reinhold Co.
135 West 50th Street
New York, New York
USA 10020

To whom it may concern;

I would like to gain permission to include in my thesis the diagram which is found on page 10 of Stress for Success by D.R. Morse and M.L. Furst published by your company in 1979. The title of the diagram is called, "The Stress Path."

I am eagerly looking forward to further correspondence with you as soon as possible regarding this matter.

Thank you.

Yours very truly,

Elizabeth E. Rollheiser